

# FLIGHT

The  
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AND AIRSHIPS

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## CONTENTS

	PAGE
Editorial Comment:	679
The King's Cup Race	680
Flying Instructors	681
Central Flying School	687
The King's Cup Race	688
Private Flying and Club News	688
Blackpool Pageant	692
Gliding	693
Monospar Wing for Fokker F. VII-3 M	697
Clermont Ferrand Meeting	698
Air Transport	703
Airport News	704
A New French Light 'Plane Competition	705
Merthyr Aviation Society	705
Airisms from the Four Winds	707
Royal Air Force	707
The Industry	708

## EDITORIAL COMMENT



THE final list of entries for the King's Cup Air Race, which is to be flown on July 25, has now been issued by the Royal Aero Club. The list is not a formidable one, compared with last year's. In fact, less than half the number of machines have been entered. There can be no doubt that this is due to the decision of the Royal Aero Club to confine the race to entrants and pilots of amateur status. The reason for this decision is somewhat obscure, but the most likely explanation is that the Royal Aero Club wished to minimise trouble by ensuring that only a limited number of machines should be entered.

Last year's King's Cup Race very nearly turned out a fiasco, owing to the breaking down of the organisation at some of the controls. This, in turn, was mainly due to the large number of machines taking part in the race. No one will deny that perfect organisation is difficult when something like 100 machines are racing around the country, but as the body governing sporting flying in Great Britain it is the duty of the Royal Aero Club to organise the race, no matter at what trouble and inconvenience to itself. It is hardly the province of the club to take means artificially to restrict the number of entries. Yet that was the inevitable result of the decision to insist upon the "amateur status" of entrants and pilots.

It is rather surprising, under the circumstances, that as many as 41 machines have been entered, and if care is not taken to organise the controls better than some of them were organised last year, it is quite likely that as much trouble will be experienced.

Apart from the question of organisation for handling competitors, the Royal Aero Club will have to make very considerable improvements in the methods of keeping the general public informed of the progress of the race. Last year it was found well-nigh impossible, even for representatives of the Press, to follow the race at all closely, and quite impossible for the general public to do so. This was very largely due to the futile numbering of competing

## DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

1931

- July 10-12. R.A.F. Athletic Championships.
- July 10-19. Circuit of Italy.
- July 13-16. Lawn Tennis: R.A.F. Championships at Wimbledon.
- July 15. Opening of Roborough Aerodrome, Plymouth, by H.R.H. the Prince of Wales.
- July 15-16. Cricket. R.A.F. v. Civil Service at Uxbridge.
- July 18. Ramsgate Air Rally.
- July 18. Lincolnshire Ae.C. Air Pageant, Cleethorpes.
- July 18. T.M.A.C. Visit to Halton.
- July 22. Household Brigade Flying Club Meeting, Heston.
- July 25. King's Cup Race.
- July 25-30. Conference on Medical Utility of Aviation in the Colonies, at International Colonial Exhibition, Paris.
- July 25-Aug. 9. Rhon Gliding Competitions, Germany.
- July 27-28. Cricket. R.A.F. v. Free Foresters at Camberley.
- Aug. 1-2-3. Southdown Skysailing Club's Annual Flying Meeting.
- Aug. 3-4. Cricket. R.A.F. v. R.N. at Halton.
- Aug. 15. Scarborough Ae.C. Air Pageant.
- Aug. 15. Manchester-Liverpool Inter-City Race.
- Aug. 22. Newcastle-on-Tyne Meeting.
- Aug. 29-Sept. 5. Boulogne Air Week.
- Aug. 29-Sept. 7. U.S. National Air Races, Cleveland, Ohio.
- Sept. 5. Norfolk and Norwich Ae.C. Display at Yarmouth.
- Sept. 5. Haldon Flying Meeting.
- Sept. 12. Schneider Trophy Contest.
- Sept. 23-Oct. 11. French Two-Seater Light 'Plane Competition.
- Sept. 26. Garden Party, Bristol and Wessex Ae.C.

machines. The machines carried the numbers given them when they were entered, and not the numbers representing the order of starting. The result was that on the morning of the race the first 10 machines off carried the numbers 16, 15, 50, 95, 5, 54, 96, 36, 22, 64, and so on down the line of 88 machines. With such a meaningless jumble of figures it was hopeless to try to follow the race closely.

The obvious system of numbering, and the one which, in reason, *must* be adopted this year, is to number the machines in the order of handicapping, the limit machine being No. 1 and the scratch man 41. If that is done, the public at the various controls and turning points will know definitely that if No. 7 arrives before Nos. 5 and 6, for example, he has been overhauling these machines and is doing well.

It is a little difficult to see any valid excuse for not adopting this system of numbering. Paint and dope do not take long to dry, and even if competitors do not know until late on the Friday evening before the race the number which they have to carry in the race, there is still plenty of time to have the numbers put on. That is taking a very extreme case. Actually there is no reason, presumably, why Messrs. Dancy and Rowarth should not have the handicap allowances worked out three or four days before the race.

It may, of course, be that the Royal Aero Club fears that if machines have to be numbered according to handicap, there will not be time to get all the numbers into the official programme. That is a difficulty which we ourselves share with the club. We also would like to have the final numbers, etc., well in advance, but if we cannot get them we have to make arrangements for their inclusion at the last moment or else go to press without them. In the case of the Royal Aero Club's official programme, it would appear that one way out of the difficulty would be to leave a blank page on which purchasers of the programme could themselves note down any changes in numbering made after the programme was printed. It would be far better to have a few of the numbers wrong than to have all the 41 machines going about the country carrying perfectly meaningless numbers, or, as an alternative, there could be an inset or paste-in.

Then there is the question of score boards. Last year, at Hanworth, arrivals at the various controls were announced by microphone and loud speakers. This was totally inadequate. There *must* be score boards in the enclosures, and they *must* be so arranged that the results can be displayed very rapidly. In this year's race there are five controls. Thus it will be necessary to have six sets of figures prepared, running from 1 to 42 (assuming that no one wants No. 13), one set for each control and one for the start.

It would be desirable, but is by no means essential, to have the times of arrival at the various controls. In a handicap race, such as that for the King's Cup, it is not *speed* which one wants to know as much as *place*, at any rate during the race. Afterwards it is interesting to know what speed each competitor

has averaged around the course, but on the day of the race it is *place* which is the really important factor. It matters very little to the interest of the race whether a competitor flies the course at 100 m.p.h. or at 120 m.p.h., but it does matter very much whether he arrives first or tenth.

For the sake of simplicity, therefore, it may be quite sufficient if the score boards in the different enclosures are arranged merely to show the order of arrival at each control, provided the racing numbers correspond with the handicap allowances. The results will, it is assumed, be sent to Heston by wireless, and they should be hung up without a moment's delay. We say "hung" advisedly, because the numbers must be large and should be printed on cardboard squares so that as a machine is reported from a turning point, its number can be hung up at once. Chalking up the numbers is much too laborious a process, quite apart from the fact that chalked numbers are not easy to read from any considerable distance.

A feature of this year's race which should appeal strongly to Londoners is the fact that Heston Air Park is not only the starting and finishing point but is also an intermediate control during the race, machines returning from Hooton having to make a compulsory stop at Heston before proceeding on the last stages of the race, via Shoreham, Hamble and Bristol back to Heston. This will give visitors to Heston an opportunity to watch the machines while they are being refuelled for the last section of the course, and will also give a good idea of whether the race is likely to produce a close finish or not.

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In this issue we publish an article on the Central Flying School, where all R.A.F. flying instructors undergo a special course before they are posted to flying training schools. The staff of the C.F.S. regularly visits all the F.T. schools and also the squadrons at Oxford and Cambridge to see that the approved methods of teaching piloting are uniformly carried out. The civilian schools at which officers of the R.A.F. Reserve receive instruction are not visited by the C.F.S. staff, and their instructors are not obliged to go through courses at Wittering. In the interests of uniformity, it would seem a good thing if the Reserve schools were put on the same footing as the schools for the regular R.A.F.

The training of civil pilots is also a matter in the public eye. In our issue of April 24 we alluded to a move by the Guild of Air Pilots, designed to restrain ordinary holders of "A" and "B" licences from undertaking to teach people to fly. The Guild is now contemplating the issue of its own certificate to competent instructors. This is an excellent move, and we hope it will receive the support of the Air Ministry. We believe that the hands of the Guild would be considerably strengthened in this campaign if a close liaison, on the lines mentioned, were to be established between the Reserve schools and the Central Flying School.





# THE CENTRAL FLYING SCHOOL

By

MAJOR F. A. de V. ROBERTSON, V.D.

**Q**UIS custodiet ipsos custodes? asked a Roman satirist, which we take leave to translate as "who will instruct the instructors?" The answer is "The Central Flying School." That is its latest and chief function, though it has other functions too. Outside service circles not very much is known of the C.F.S., so we propose to give here some account of its history and its doings.

The Central Flying School was the first original unit to be constituted in the Royal Flying Corps, and it served both the naval and the military wings. It was located at Upavon aerodrome, and it had its habitation there from August, 1912, until 1926, when that aerodrome was required for two fighter squadrons under the reorganisation scheme for the Air Defence of Great Britain, and the C.F.S. was moved to Wittering aerodrome in Northamptonshire.

In the first instance the R.F.C. did not undertake to teach elementary flying. That was left to civilian instructors. Officers who applied to join the corps first went to one of these instructors and learnt the elements of taking off, figures of eight, and landing. When they had satisfied the examiners of the Royal Aero Club and had received its certificate, they went to Upavon and received further instruction at the school there. It was the C.F.S. which granted "wings" to military and naval pilots.

The first Commanding Officer of the Central Flying School was Captain Godfrey Paine, R.N., now a retired Air Vice-Marshal, a K.C.B. and a M.V.O. As stated above, he opened the school in August, 1912, and he was still in command of it when war broke out two years later. His assistant commandant was Major H. M. Trenchard. The outbreak of war at once seriously depleted the C.F.S., as it also likewise affected the Royal Aircraft Factory at Farnborough. The military wing of the R.F.C. consisted of four squadrons, and all those officers who remained in England were very busily employed in serving the needs of those squadrons. Soon came the need for expansion, and the R.F.C. aircraft factories, which had hitherto lived from hand to mouth, were required to produce aeroplanes in ever-increasing numbers. New pilots, too, were called for, and had to be trained. Not only had the casualties of the original squadrons to be replaced, but new ones had to be formed. The C.F.S. was soon overwhelmed with work. Its instructors were the only expert military pilots who were capable of training men for air work with the Army. Their numbers had to be increased, first by enlisting some volunteer civilian flying instructors, and later by recalling Major Longcroft and a number of other military pilots from France. Training stations were established at various other aerodromes, and by degrees our organisation for turning out pilots became fully as elaborate as our



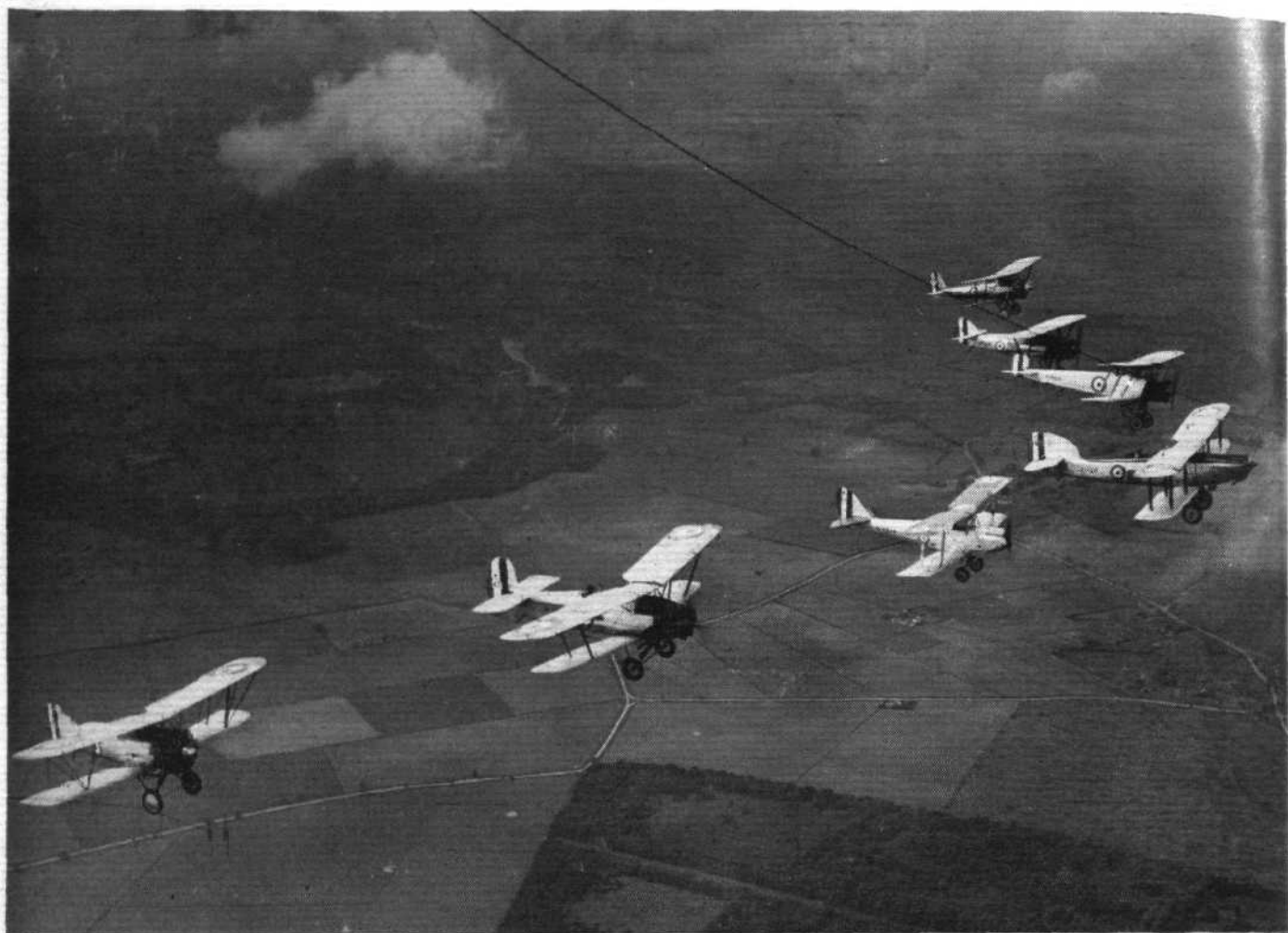
**LINE ASTERN:** Five "Moths" flown by C.F.S. instructors upside down. They seem to regard this position as quite normal. (Flight Photo.)

organisation for turning out aircraft.

In the first part of the war Upavon and other military training stations had to undertake flying training *ab initio*. The civilian flying schools mostly disappeared. Up to Christmas, 1914, the C.F.S. was also the centre of naval flying training, but relief was brought to the hard-pressed school when the Admiralty instituted its own training system. Upavon then gradually became purely military.

At one period during the war, in 1917, Gosport rather than Upavon became the centre of flying thought. This was largely due to the personality of Lt.-Col. Smith-Barry, who commanded the Special School of Flying at Gosport. At that school, flying instruction was first reduced to an art and systematised. Previously anyone who could fly was considered able to teach anyone else to fly. No other theory was practicable in the early days, when everything was rudimentary. Consequently there were almost as many different methods of instruction as there were instructors. Many pilots who tried to give instruction, though good pilots themselves, were quite unfitted to become teachers. The Gosport school set to work to alter all that. Not only was the art of flying analysed, but the art of teaching was also reduced to a regular system. In the stress of war it was not possible that all instructors should be trained at Gosport, but the number who were so trained became a leaven which gradually spread through the country and raised the standards. The present-day C.F.S. is the heir to the traditions of the Gosport of 1917.

Upavon for a time was entrusted with another very important function. It became the special school for instruction in air fighting. Ideas on this subject were first formed at the front by gifted individuals like Albert Ball. They discovered for themselves methods of attack and defence, but it was not always possible for them to pass their theories on to many of the young pilots. Too often these untried officers had to discover for themselves how to fight with a chance of winning, and this they could only do by actual experience of fighting. While it may be granted that in fighting, as in teaching and in many other forms of activity, a genius will always develop his own style, a certain amount of technique can be taught to every novice which will permit him to engage in his first combat with a reasonable degree of confidence in his own ability. Before the Fighting School was instituted far too many of our young pilots were killed before they had learnt how to look after themselves in a fight. At this time the Upavon school was no longer called the Central Flying School, but was officially known as the Flying Training Establishment and Fighting School. It was during the command of Group Captain (now Air Commodore) N. D. K. MacEwen, C.M.G., D.S.O., that the establishment at Upavon became



**A MIXED GRILL:** A formation of seven different types over Wittering, viz., "Gamecock," "Atlas," "Moth," "Fairey III F," "Avro-Lynx," "Siskin," and "Bulldog." (FLIGHT Photo.)

once more the Central Flying School. After the war the C.F.S. did a certain amount of further *ab initio* instruction, but it gradually settled down to be the school for training instructors. The first course for instructors on the present system was held in 1920. In 1926 the school moved from Upavon to Wittering, and the change was one for the better. Wittering was laid out as an Air Force station after the war, and upon a definite plan. The buildings are situated with an eye to convenience. While there is nothing cramped about the station, it is not, as some R.A.F. stations are, too widespread. One does not have to waste time and energy in walking long distances to reach another office with which frequent business has to be done. Moreover, the buildings are modern in construction, bright, comfortable, sanitary, and easy to keep clean. While Wittering is actually in Northamptonshire, its nearest town, Stamford, is across the border in Lincolnshire. That part of England, on the old Fen country or near it, is one large flat plain. Good aerodromes are easy to find, and the country round is very suitable for flying. It is easy to pick a spot for a forced landing. Sport of all sorts, hunting, shooting and polo, can be obtained in the neighbourhood. The nearest polo club is Burleigh Park, and several officers stationed at Wittering are regular players.

Whereas the need for a uniform system of flying instruction was first grasped at Gosport during the war, it is now universally recognised. There are three flying training schools in England (that

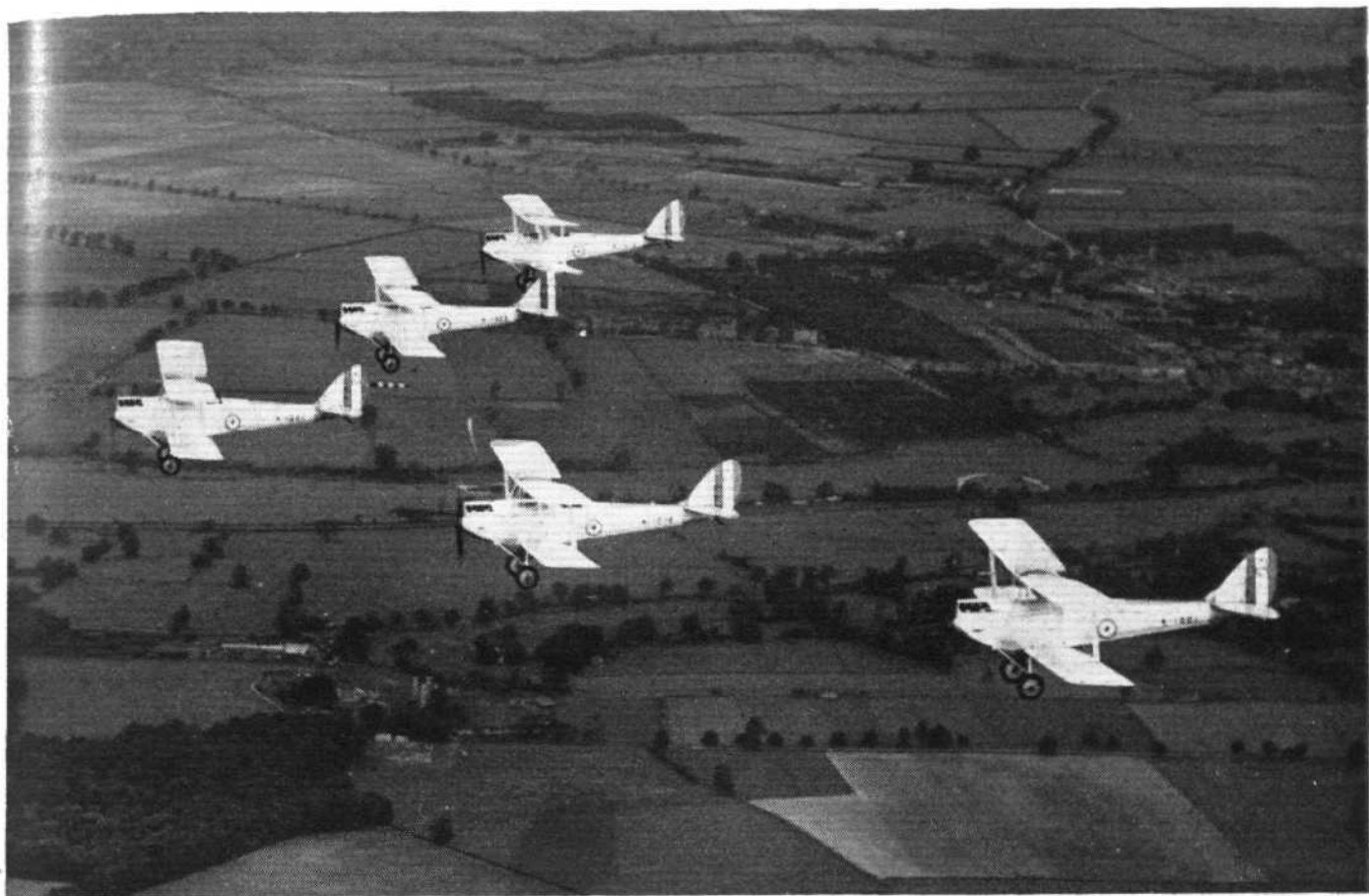
at Netheravon having recently been closed down), namely, No. 2 F.T.S. at Digby, No. 3 at Grantham and No. 5 at Sealand; and there is one, No. 4 F.T.S. at Abu Sueir, in Egypt. In addition to these, account must be taken of the *ab initio* training given to cadets at Cranwell, and to undergraduates of Oxford and Cambridge in the two University Air Squadrons. The civil flying schools for the Reserve of Air Force Officers should also be remembered. For these civil schools no responsibility has yet been given to the C.F.S., but it is definitely responsible for the methods and standard of training at all the others. The instructors at the other schools must have been through a course at Wittering and must hold a C.F.S. certificate.

Every year a party of instructors from Wittering visits each of the schools, and examines a number of instructors and pupils at each so as to ensure that the standard system of instruction is being carried out. Even the Flying Training School in Abu Sueir is not neglected. Each year



**THE C.O., THE CHIEF INSTRUCTOR, AND THE DISPLAY FLIGHT:** Seated, left to right: F.Os. J. F. Moir and W. E. P. Johnson, Fl.-Lt. B. E. Embry, A.F.C., Group-Capt. J. E. A. Baldwin, D.S.O., O.B.E., Sqdn.-Ldr. H. A. Whistler, D.S.O., D.F.C., F.Os. R. R. Nash, J. B. Veal, and P. MacG. Watt. (FLIGHT Photo.)





the Commandant at Wittering, the chief instructor, and two or three other C.F.S. instructors, travel to Egypt and test the instructors and pupils at the F.T.S. there. During these visits the men from Wittering are kept extremely busy, and practically spend the whole of each day sitting in aeroplanes testing the methods of the F.T.S. instructors and the way in which those methods are absorbed by the pupils.

These visits are a very essential part of the work of the C.F.S. Not only do they ensure that the F.T.S. instructors do not backslide once their course at Wittering has been finished, but they also serve as a pooling of ideas on the subject of flying training. It is only to be expected that a man who has done his course at Wittering and received his certificate should sometimes conceive a new and good idea during his practical work at a flying training school. When this happens, the brain-wave is not left as a monopoly to the school or the instructor on which it has descended. It is passed on to the Wittering staff during

**The five "Moths" of the Display Flight in abnormal flying position. (FLIGHT Photo.)**

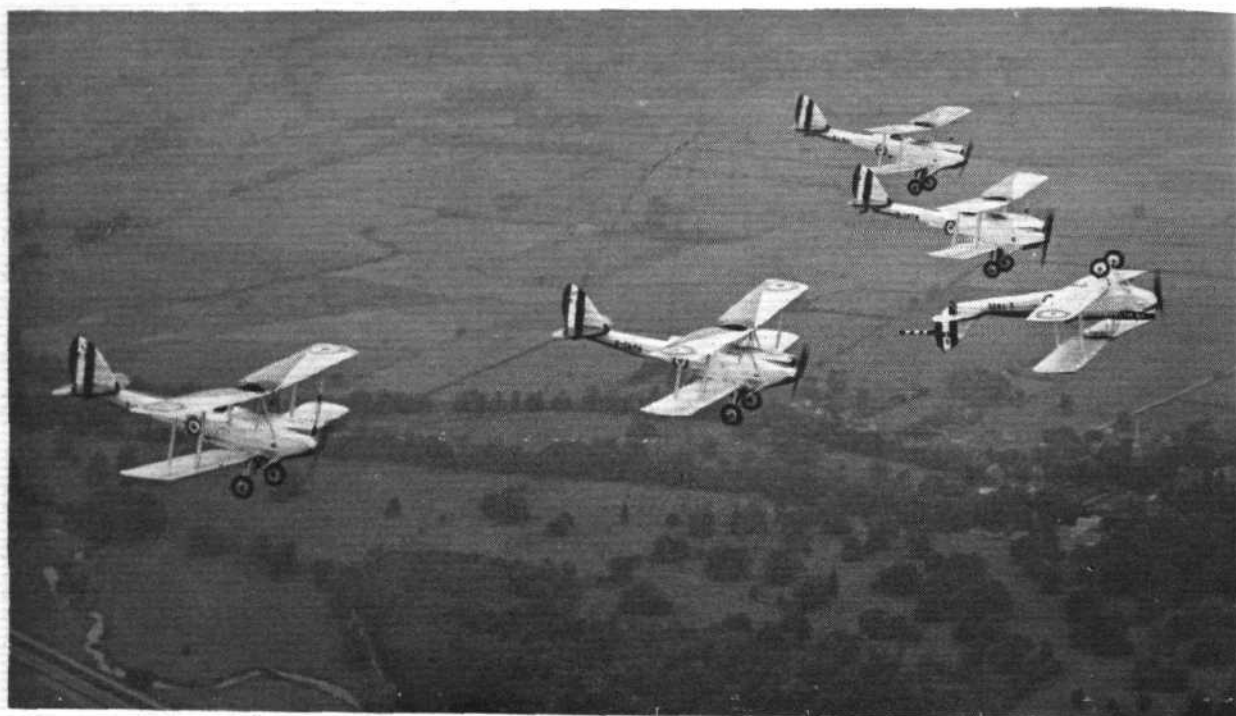
the annual visit, and so the whole of the flying training organisation is able to benefit by it. The chief instructor at Wittering says that he often gets good ideas from one or another of the flying training schools.

It is a rule of the Central Flying School that it does not choose its own instructors from among its own pupils. When a man has finished his course at Wittering, he invariably goes to one of the flying training schools for a year at least. After that, if he is sufficiently proficient, he becomes eligible to be selected as an instructor at the Central Flying School. It has been found better in practice that a man, however gifted he may be, should have at least a year's experience in teaching ordinary mortals before he is promoted to instructing instructors how to instruct.

An instructor's course at Wittering lasts for three months, and three courses are held each year with an interval between each. The standard required of a C.F.S. instructor is very high. He must, in the first place, be both gifted and trained (two very different matters) in the art of imparting instruction. He must be able to realise how the words of an instructor will appear to the pupil who hears them. He must correct any tendency in the instructor whom he is teaching to use ambiguous expressions which may convey a wrong impression to a novice who is learning to fly. He must have infinite patience, and he must impress upon the would-be instructor the need of infinite patience. Unless a pupil is really lazy and obstinately disinclined to take pains (and this is true of very few men who are learning to fly), nothing is so likely to discourage him and retard him as impatience or irritability on the part of his teacher. Patience is a first essential in teaching a keen but possibly slow pupil, but



**THE INSTRUCTORS OF THE C.F.S.:** The C.O. is on the right of the photograph and the Chief Instructor is next to him. Others, from left to right: Flt.-Sergt. Godfray, Sergt. Jurdon, F.Os. R. R. Nash, G. Bartholomew, G. H. W. Selby-Lowndes, J. Mutch, W. E. P. Johnson, G. V. Carey, J. F. Moir, J. B. Veal, L. C. Barling, Fl.-Lt. J. H. Hargroves, F.O. L. R. S. Freestone, Fl.-Lt. C. H. Flinn, F.O. P. MacG. Watt, Fl.-Lt. B. E. Embry, A.F.C. (FLIGHT Photo.)

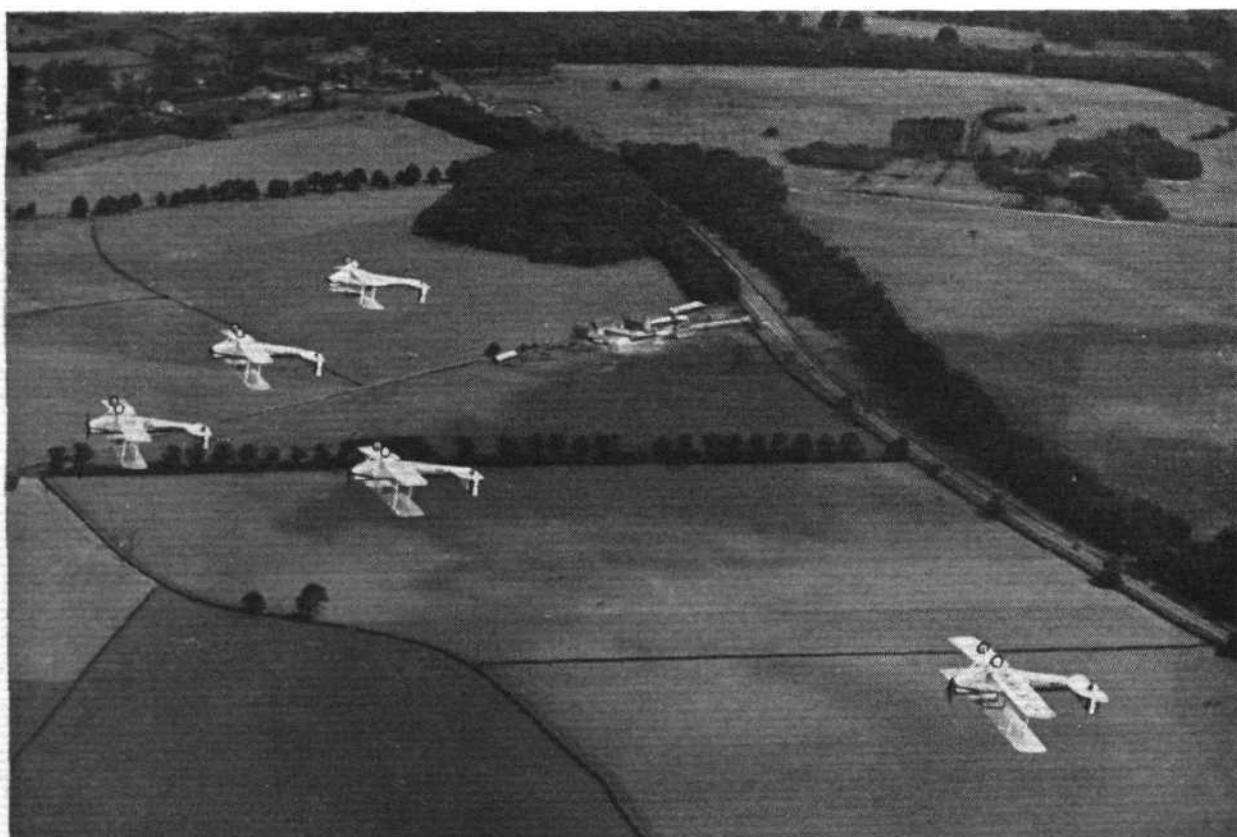


**THE C.F.S. DISPLAY FLIGHT:** The leader (with streamer) is in his normal flying position; the rest are showing that they can fly upside up. (FLIGHT Photo.)

there are many other points, too. A good teacher needs to be able to analyse difficulties, discover what is perplexing his pupil, and to make matters clear. He needs, in fact, to be a fairly accomplished psychologist. How good the staff are at Wittering is proved by the fact that they sometimes have to teach foreigners who know very little of the English language. That is an exacting task. Sometimes the foreigner is put in charge of one very patient instructor, who devotes his whole time to him. He not only takes him into the air, but he takes him about and sees to his comfort in every way, and all the

time is teaching him English. Almost invariably the results are good, and many warm expressions of profound gratitude and appreciation have been received from foreigners who have benefited from Wittering's infinite capacity for taking pains.

In addition to being able to teach, and in particular to teach how to teach, a very high standard in actual piloting skill is expected from the staff at Wittering. So high an average is maintained that usually when a man, probably already a pilot above the average, is first taken up at Wittering, his natural instinct is to exclaim "Good



**THE DISPLAY FLIGHT ALL FLYING NORMALLY:** Tyrannous authority forbids them to stay like this for more than five minutes. (FLIGHT Photo.)





"HERE WE GO ROUND . . .": The five "Moths" form a circle, still in normal flying position. (FLIGHT Photo.)

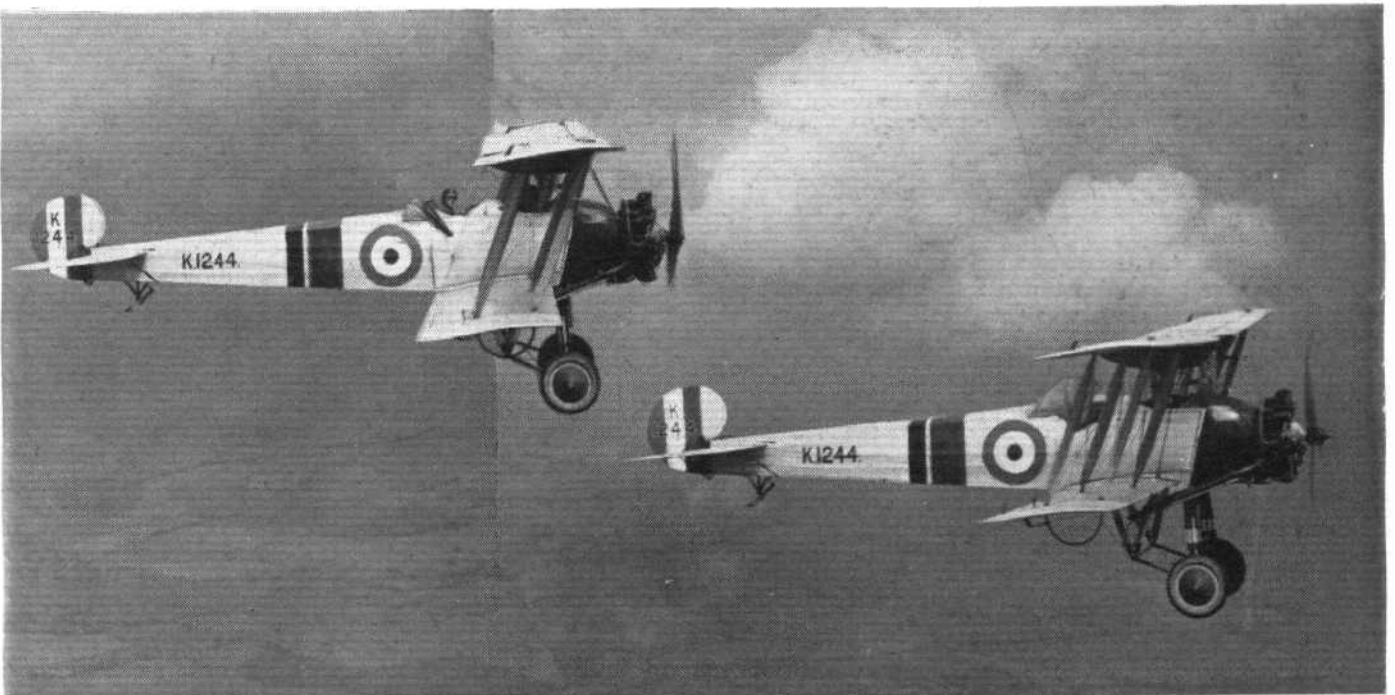
heavens! I thought I could fly, but I find I have to start learning all over again!"

Two other classes of instruction are given at Wittering besides the instructors' course. One is the refresher and conversion course, and the other is the course in instrument flying. The refresher course is for officers who have not been able to keep in flying training. Senior officers, engaged on administration, sometimes cannot spare time to fly themselves and keep their hands in. After a course at Wittering they enter upon a new lease of flying life.

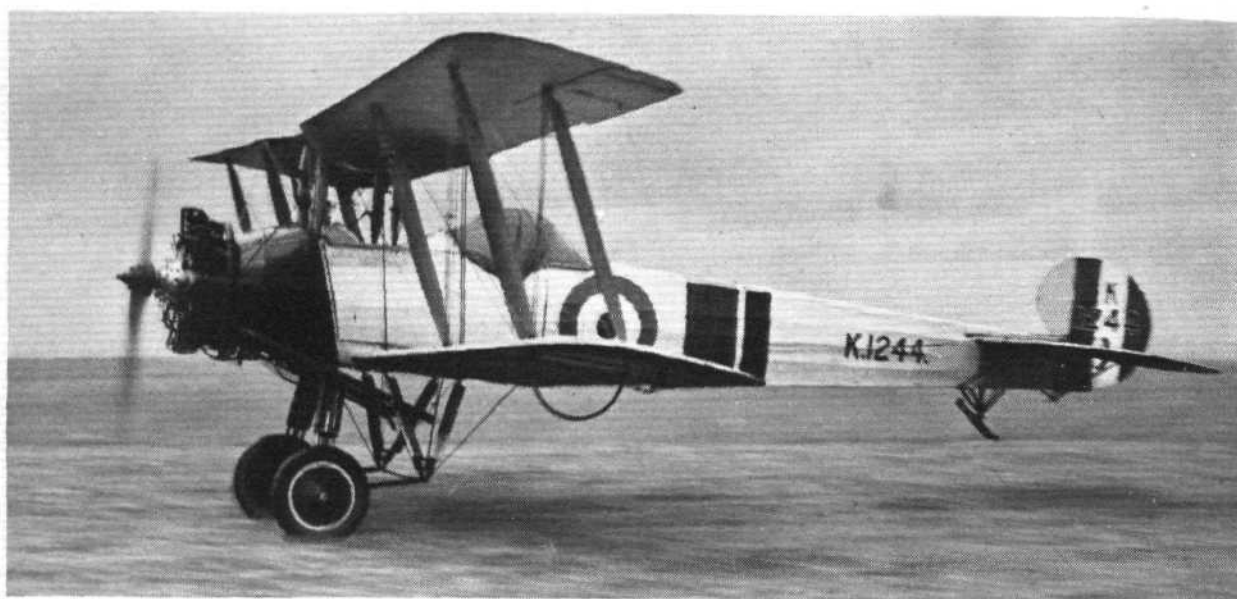
The conversion courses are for the benefit of officers and airmen pilots who have to change over from one type of aeroplane to another. Pilots, for example, return from one of the Eastern commands where they have grown thoroughly expert on "Victorias," "Wapitis" or Fairey III.F machines, and find themselves posted to a fighter squadron; or a pilot who can throw a "Bulldog" about

so as to bewilder the best scarf-ring gunner in the service has to take over a flight of "Virginia" night bombers; or a pilot who can put a "Southampton" down in a choppy sea with wind across tide is faced with the necessity of fishing for strings with an "Atlas" hook. Pilots in such circumstances go to Wittering and there learn to fly any type of landplane which is necessary. Only eight pilots on refresher and conversion courses are accommodated at the C.F.S. at the same time. There is no definite length for such courses. The pilots are kept at it until each is fit to fly his new type of aeroplane.

One consequence of this is that a great variety of aeroplanes has to be kept at Wittering, and the instructors of the C.F.S. have to be expert in giving instructions in all of them. To illustrate this, our photographer was permitted to take a formation of seven different types, a Fairey III.F, an Avro-Lynx, a "Moth," an "Atlas," a



**INSTRUMENT FLYING:** These two pictures of the same Avro-Lynx illustrate instruction in flying solely by instruments. In the first the head of the pupil can be seen, in the second it is hidden by the hood. The instructor is in the front cockpit. (FLIGHT Photo.)



**TAKING OFF SOLO BY INSTRUMENTS ONLY:** An instructor takes off solo with the hood up. He put the machine into a spin and flattened out before lowering his hood. We believe that this is the first photograph ever published of this extraordinary feat. (FLIGHT Photo.)

"Siskin," a "Gamecock," and a "Bulldog." Surely no stranger formation ever took the air. The formation, however, was perfectly kept, even when the "V" wheeled, and the "Bulldog," which acted as pivot, must have been just as near the stall as was comfortable.

The third course given at Wittering is instrument flying, vulgarly called "blind flying." This is no mere "stunt," as some people suppose. If pilots are to take their aircraft safely through dense fog and to manage them on dark nights, they must learn to trust their instruments, even when their five senses seem to contradict the story which the instruments tell. It is well known that in fog a pilot loses his sense of the force of gravity as well as of direction; and may get into a spin or on to his back without being aware of it, except through the pull of his straps. Sir John Alcock, when flying the Atlantic, emerged from a cloud to find that he was in a spin. Kingsford Smith says in his account of his Pacific flight that he would never have got safely through the great cloud banks and kept on his course withal if he had not sedulously practised himself in flying solely by instruments. At first it goes against the grain to trust solely to them. Officers at Wittering undergoing this course confess that at first the instinct to disobey the instruments is almost insuperable.

The method of training is to put a cover over the rear cockpit so that the pupil cannot see out. The instructor sits in the front cockpit, which is uncovered, and directs the pupil. At first mistakes will be frequent, but the

instructor is there to prevent a mistake from causing a catastrophe. Two of our photographs show an instructor and a pupil in an Avro, one with the hood down and the other with it up.

During our visit to Wittering, however, we were privileged to see a most remarkable feat. One of the instructors actually took off solo with the hood over his head. Our last photograph shows the Avro with its tail up a couple of seconds before the wheels left the ground. It can be seen that the front seat is empty, and we can vouch for it that there was no instructor crouching down in the cockpit. The pilot took off perfectly, climbed to a safe height, and actually put his machine into a spin. He came out of it, brought his Avro to an even keel, and flew level round part of the aerodrome before he put his hood back.

It was an amazing performance—possibly the greatest feat of piloting we have ever been privileged to see. Yet the only special instrument fitted in the machine was the Reid and Sigrist gyroscopic turn indicator. With that, and with his ordinary instruments, this instructor was as sure of himself as if he could see the horizon all the time. When skill at flying with instruments can be brought to this pitch, fog begins to lose its terrors for the pilot.

Such skill, however, is not yet universal. We believe, though we are open to correction, that nowhere else in the world can one see a pilot take off solo, spin, and recover with this hood over his head. This feat is unique, only to be seen at Wittering at the Central Flying School.

#### The Society of Aircraft Agents

We have received the following letter:—

I have been requested by my Committee to ask you if you would be good enough to allow us editorial space for the following notification.

We are anxious for this to be brought to the notice of as many traders as possible, and should be most grateful for any assistance that you can give us in the matter.

In order to try and stabilise the position of the Aircraft Agent in this country, it has been proposed that a Society of Aircraft Agents should be formed, the membership of which should carry with it a high subscription, and that it should be confined to bona-fide traders only; and it is also proposed that the manufacturers be asked to recognise this Society, so that only its members should be eligible for trade discounts.

Whilst it was found impossible to circularise all selling organisations and manufacturers dealing in aircraft, some of the available agents were asked to give their views on the matter, and, as a first step, two preliminary meetings were held, and a temporary committee appointed to look into the whole question.

This committee will be glad to consider all suggestions that may be put up by agents or manufacturers, and

special attention will be paid to points dealing with trade discounts and the abolition of price-cutting, or any matter which affects the Aircraft Agent.

Whilst it is realised that there are great difficulties to be overcome, and that ideas will vary considerably, it is hoped that all companies concerned with the sale of aircraft will do their best to co-operate for the common good, and that, if they have any suggestion to put forward, they will not hesitate to communicate with any member of the preliminary committee or write direct to me at Heston Air Park, when their letters will be placed before the next meeting. The temporary committee which was appointed to look into the question consists of Mr. Brian Lewis, Mr. Powis, Mr. St. Barbe, Mr. Duncan Davis, and Mr. Clarkson, and, in view of the fact that it was found impracticable to write to many of the members of the trade who would be concerned in further developments, and that no further steps can be taken until the present committee has investigated all suggestions which may be put forward, it would be of the greatest assistance if traders who feel that they would support the Society would communicate with me as soon as possible.

C. CLARKSON.

Heston Air Park, Hounslow, Middlesex.



# THE KING'S CUP RACE, JULY 25, 1931

**I**N our issue of June 26 we published a list of 41 entries for the race for the King's Cup, which starts and finishes at Heston Air Park on Saturday, July 25.

Since that time four more machines have been entered, but four of the original list have been scratched, so that the entries list still remains at a total of 41 machines. The four machines which have been scratched are: The D.H. Moth (Gipsy I), entered by "Lionel Hooton"; the Blackburn Bluebird (Gipsy I), entered by Mrs. C. W. Slack; the Blackburn Bluebird (Gipsy III), entered by the Hon. Mrs. Victor Bruce; and the Avro Avian (Hermes II), entered by Mr. J. R. Chaplin.

The four new entries are: A Westland Widgeon III (Cirrus III), entered by Squad.-Ldr. the Hon. Ralph A. Cochrane, A.F.C., and to be piloted by J. R. Ormston; a De Havilland Puss Moth (Gipsy III), entered and to be flown by the Hon. Lady Bailey; a Comper Swift (Pobjoy R.1), entered by Captain Gerard Fane, D.S.C., and to be piloted by Squad.-Ldr. J. M. Robb, D.S.O., D.F.C.; and a De Havilland Moth (Gipsy I), entered and to be piloted by Miss F. J. Crossley.

A full list of entries will be published in our issue of July 24, in which it is hoped to include the handicap allowances, racing numbers, etc. In the meantime it may be of interest to analyse the entries in order to discover how many different aircraft types will take part and how many of each type.

The De Havilland Moth with Gipsy I engine heads the list, with 10 machines entered. The De Havilland Puss Moth with Gipsy III engine comes next with five machines entered. Then follows the Blackburn Bluebird (Gipsy I) with three, while two each are entered of the following types: Avro Avian (Cirrus III), Blackburn Bluebird (Hermes I), De Havilland Moth (Gipsy II), Southern Martlet (Genet II), Spartan (Hermes II), and Spartan (Cirrus III).

Of the following types, one each is entered: Arrow Active (Hermes II), Avro Avian (Genet Major), Avro Avian (Gipsy I), Avro Sports Avian (Hermes II), Civilian Coupé (Genet Major), Comper Swift (Pobjoy R.1), Curtiss-Reid Rambler (Gipsy III), Westland Widgeon (Gipsy I), Westland Widgeon (Genet II), Westland Widgeon (Hermes II), and Westland Widgeon (Cirrus III).

Of new machines there are lamentably few. This is doubtless largely due to the decision of the Royal Aero Club to confine this year's race to amateurs, a decision which has removed the "Trade" interest from the race to a very large extent. FLIGHT's views on this subject have already been set forth, and need not be repeated here beyond stating that we consider that the Royal Aero Club made a very serious mistake.

## The Course

The course for this year's race for the King's Cup is shown in the accompanying sketch map. Starting from Heston Air Park, London, there are turning points at Leicester (Desford), Nottingham (Tollerton), Brough, Birmingham (Castle Bromwich), Manchester (Woodford), Shoreham, and Hamble, while at the following controls landings are compulsory: Norwich (Mousehold), Leeds (Sherburn-in-Elmet), Liverpool (Hooton), London (Heston), and Bristol (Whitchurch). The Royal Aero Club has not yet announced how long is the compulsory stop at these places. The whole course is one of 982½ miles.

A glance at the sketch map shows that at several points the course makes a very sharp turn. For example, at Norwich the angle between the course of machines approaching Mousehold and machines leaving Mousehold for Tollerton is very small. If the visibility is good on

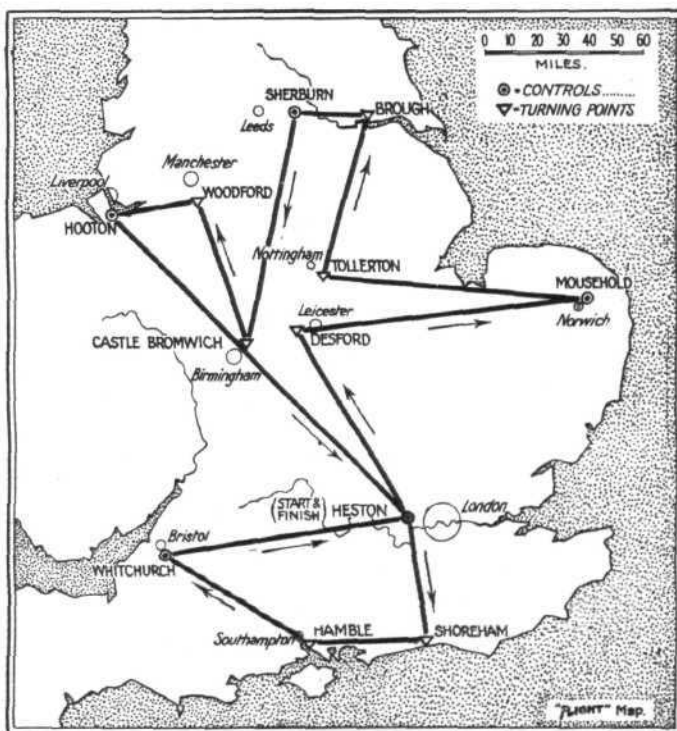
the day of the race, this will not matter much, but if it is bad, as it well may be, there will be very considerable risk of collision. In bad visibility it is likely that machines will at times be well off their course, and in that case a machine approaching Norwich north of its proper course may easily meet another machine which has left Norwich some time before and has got well south of its course.

The angle at Heston is also bad, but does not matter much, as the last machine will have left Heston long before the first one can be approaching Heston from Hooton. At Castle Bromwich, however, there appears to be quite a possibility of machines en route for London from Hooton being mixed up with machines rounding the Castle Bromwich turning point en route for Hooton. It is true that on a large scale map the points do not lie quite so alarming close together, but in bad visibility machines may easily be many miles off their course.

## Arrangements at Heston

This is the first time in the history of the race that the starting and finishing point is also an intermediate control, and Heston Air Park is making great preparations for dealing with the crowds which are expected. An unusual car parking arrangement is being tried for the race, by which visitors who wish to view the race from their cars will be able to reserve parking positions around the aerodrome boundary.

During the day there will be flying demonstrations to keep visitors interested while the King's Cup machines are away. Among the attractions will, it is hoped, be the famous German pilot Herr Udet, who, it will be remembered, made some sensational flights in the film "The White Hell of Pitz Palu."



THE KING'S CUP AIR RACE: Sketch Map of the Course. Heston (London) is the starting and finishing point, and is also an intermediate control.





## PRIVATE FLYING AND CLUB NEWS



The new Club House at Blackpool.

### THE BLACKPOOL PAGEANT

**T**HE go-ahead attitude adopted by the Municipality of Blackpool is one which should be copied by the municipalities of other towns, for Blackpool make a boast that they are always in the forefront with any scheme to provide better and more modern facilities for the comfort and entertainment of their visitors.

It is only natural, therefore, that they should be among the earliest to establish a municipal aerodrome. We gather, however, that this was not done without considerable opposition on the part of several members of the Corporation, but National Flying Services eventually converted sufficient of them to start on the scheme, and the aerodrome was finally opened by the Prime Minister on June 2 this year.

In order to bring the aerodrome before the public, this pageant was arranged, and there can be no doubt that those who were against its establishment must now be converted, for the pageant was a very definite success; also, we saw some of those present at the banquet afterwards, which we imagine was a very graceful way of admitting that they were now converted.

The establishment of a municipal aerodrome must, by its very nature, be a long-sighted undertaking, since a rapid return cannot be expected on the capital outlay, and the money put into it may very well have to lay there for some years. If, however, the aerodrome is not established now,

it is perfectly certain that the greatest difficulty will be found, at a later date, in choosing an adequate site, since to be of any use a municipal aerodrome must be large and close to the centre of the town. Stanley Park certainly fulfils both these requirements.

Those responsible for furthering the scheme were very lucky in having Sir Lindsay Parkinson as the President of the Aerodrome Committee, and his relative, Councillor J. J. Parkinson, as the Chairman of the Committee, for on these two rested the onus of raising sufficient enthusiasm to carry things through, and no pair of executives could have done better work than these have. In leasing the aerodrome and its management to N.F.S., they showed good judgment, and the growing popularity of the club has justified their action. In keeping with the general way things are run at Blackpool, the aerodrome buildings are very modern and somewhat unique. The clubhouse itself is a peculiar sort of structure, but has the great advantage of providing a large amount of space inside without being too high or having an aspect too much reminiscent of the somewhat unsightly modern bungalows. Similarly, the main hangar is a large roomy structure having a curved roof, as can be seen from the photographs, much on the same lines as the clubhouse.

The meeting last Wednesday was in its way a triumph of organisation on the part of N.F.S., and the criticisms we can offer of the way the whole show went off are comparatively unimportant.

A great deal has been said of previous pageants run by N.F.S., and it must be admitted that many of them have somehow lacked "go," and this has reacted unfavourably on subsequent pageants. This time, however, all the items were carried through in an interesting manner, and many of them in the face of considerable difficulties. We, ourselves, felt that everything was just a little too drawn out, and that it would have pleased the public better had the items been cut shorter and had joy-riding started considerably earlier; but we understand that questions of policy were involved which it is not possible to go into here, and that taking this into account, the management were justified in running things as they did.

To start with, there was an arrival competition, but only one machine, namely, the Blackburn Lincock, flown by Capt. Blake, arrived anywhere near the zero time of 12.45 p.m. At 2.30 p.m. Sir Lindsay Parkinson, the President, opened the meeting with a suitable broadcast speech, assisted by the Mayor, Alderman Tomlinson, and the Chairman of the



The Club House on the day of the meeting.



Committee, Councillor Parkinson. The first event was a fly-past, which showed the thousands present a few of the various types of machines and also served to let the general public in Blackpool know that the pageant was being held, as at least two circuits of the whole town were made.

Capt. Blake then took up the Lincock and gave a very fine display of aerobatics. The particular machine he was flying was one which has already been seen about in the hands of F/O. W. E. Johnson, and is fitted for inverted flying, so that he was able to do considerably more than he could have done on a standard machine.

The second event was a demonstration of the Autogiro. This very nearly coincided with the lines suggested for such a demonstration in *FLIGHT*. There was a landing on a tennis court, which had been marked out on one side of the aerodrome, and a take-off from the same place, also a stunt, which was particularly impressive, wherein a tape which had previously been attached to the tail skid was removed as the Autogiro itself flew slowly across the aerodrome at an altitude of a few feet. F/O. Brie was the pilot, and he appears to have mastered the principles of real demonstration better than anybody we have seen for a very long time. He did not make his display into an aerobatic one, nor did he fly sedately round and round, but he brought out, and with great emphasis, the peculiar flying properties for which the Autogiro is already famed. He made several vertical landings with practically no run at all, and, besides showing how the machine could be landed on a tennis court, he did such things as four complete landings and take-offs across the width of the aerodrome. It is true, his take-off from the tennis court might, had his



**Col. Strange (left) with Sqd. Ldr. Penderel who together won the Hanworth Blackpool Race in the Spartan Arrow (Gipsy II).**

engine have cut, left him in serious difficulties, and possibly have endangered the crowd, and we understand that further action may be taken with regard to this, and, while not denying that such a piece of flying was definitely one which had better been avoided, we think in all fairness to the pilot that the blame must also rest largely with the management, who placed the tennis court so close to the crowd. When a pilot is asked to give a demonstration under specially-arranged circumstances, it is very difficult for him to refuse without causing ill-feeling, and no doubt Mr. Brie did not wish to disappoint either the management or the spectators, and therefore allowed himself to be carried a little too far. We hope that on the next occasion he will make certain that the arrangements made are of such as to obviate danger before he starts his actual demonstration.

Taken all round, apart from this one incident, it was definitely a sensible display, such as really showed those witnessing it what the machine is and what it can do.

The next event was a demonstration of gliding, and F/O. Mole was launched by means of a shock cord on the B.A.C. glider, which has been christened "Barbara Cartland." Naturally, this was nothing more than a glide of a few feet, and could, we feel, have well been omitted. Incidentally, on the previous day, F/O. Mole had been towed up to Blackpool from Hanworth by Mr. Tyson in a Moth. This must be one of the longest towed flights made in England, and it is certainly unique, in that Mr. Mole also had a passenger with him; while on the Thursday following the meeting he was towed back again, in the record flying time of 3 hr., leaving Blackpool at 1 p.m., stopping for 2 hr. at Birmingham, and reaching Hanworth



**A fine photograph of the Autogiro just after Mr. Alliot had removed the tape from its tail skid while it was flying across the aerodrome. The tennis court used for landing can be seen in the foreground.**

The new and spacious hangar at Stanley Park Aerodrome.

at 6 p.m. At this point the programme lagged somewhat considerably, until a motor car had been got ready and Mr. Mole was again towed off by the car, to an altitude of a few hundred feet. He then made several turns during his subsequent glide down, and gave the crowd a little better idea of such flying. In the meantime, Herr Kronfeld, whose Wien had been brought up by road during the night, was attached to the N.F.S. Moth fitted for the purpose and towed up to somewhere about 1,500 ft. He had hoped to be able to make a flight over Blackpool, but the conditions were very bad, and he was only able to soar about for some time over the aerodrome without gaining any appreciable height. His machine is particularly graceful, and the crowd applauded his flight in a very enthusiastic manner. Mr. Will Hay, the well-known comedian, who, by the way, has now sold his other aircraft and become the owner of a Redwing (Genet II), was acting as occasional announcer, and constantly butted-in on Mr. E. C. Brown with some of his usual witty remarks. He coined a word which should, we feel, be perpetuated, when he said that cross-country flights, such as Herr Kronfeld's from Hanworth to Chatham and back, should be called "sky-hiking." After Herr Kronfeld came down, Herr Krause was also towed up in the Falke, which is being run by the Lyons Tea Department, but he appeared to have some difficulty in remaining above the towing aircraft, and instead of being towed right over Blackpool as had been announced, he finally slipped quite close to the aerodrome and came in.

At this point all flying was stopped, as the competitors in the Hanworth—Blackpool race were about due to arrive.



This race was fairly well attended, with 14 entries, and caused considerable excitement. The first to arrive was the Spartan, with Col. Louis Strange and Squadron-Leader H. W. Penderel. We were particularly glad to see the Spartan win this race, for they have tried so consistently, and so seldom been successful in beating the handicapper. This time, however, they apparently ran away with the race and maintained their lead throughout. Squadron-Leader Penderel was actually flying the machine, and there is an amusing story about him when he lost a wheel from a Camel he was flying, which shows the type of pilot he is. He had one of the few 160-h.p. Clerget engines fitted to the Camel when the accident occurred many years ago, and since it gave his machine a better performance than others, his days and most of his nights were spent in looking after this engine. On this occasion he lost a wheel on taking-off, and his first thought was for his beloved engine; getting the machine on to the ground safely would have been sufficient for most pilots to think about, but not so Squadron-Leader Penderel, for he climbed to a considerable height, then cut off his engine and dived it until he got his propeller absolutely horizontal and stationary, his worry being that if he broke the propeller on landing he would bend the crankshaft; in the final landing which he made on the one wheel, he did it so well that the machine did not even turn over, and his engine was not damaged in any way.

After an interval of some minutes, the machines began to arrive somewhat closer together, the next two being Capt. E. W. Percival, on his Hendy 302, and Mr. L. M. J. Balfour, on his Puss Moth. They came almost neck to neck for the winning post, Capt. Percival managing to get in first by 2 sec. The others then followed



Mr. E. C. Brown (right) just getting out of the tarpaulin ahead of Mr. Light in the obstacle race.

Registration Mark.	Pilot.	Aircraft.	Engine.	Started at	Finished at	Average Speed.	Placing.
WY .. ..	Col. Strange .. ..	Arrow .. ..	Gipsy II .. ..	h. m. s. 2 05 00	h. m. s. 4 16 00	90½	1
VZ .. ..	Miss Brown .. ..	Arrow III .. ..	Cirrus III .. ..	2 14 00	4 26 32	89½	8
FJ .. ..	T. Rose .. ..	Civilian Coupé .. ..	Genet-Major .. ..	2 18 05	—	—	—
YL .. ..	L. S. Dawson .. ..	Civilian Coupé .. ..	Genet-Major .. ..	2 18 05	—	—	—
DA .. ..	Miss Spooner .. ..	Moth .. ..	Gipsy I .. ..	2 20 40	4 22 14	97½	4
JE .. ..	J. D. Irving .. ..	Moth .. ..	Gipsy I .. ..	2 21 55	4 23 40	97½	6
BN .. ..	W. L. Hope .. ..	Moth .. ..	Gipsy II .. ..	2 24 20	4 22 29	100½	5
HM .. ..	F./O. H. Leech .. ..	Martlet .. ..	Genet IIA .. ..	2 25 31	4 31 43	94	12
RN .. ..	Miss Guest .. ..	Moth .. ..	Gipsy II .. ..	2 26 40	4 29 30	96½	10
YU .. ..	H. R. Law .. ..	Widgeon III .. ..	Hermes II .. ..	2 27 48	4 26 40	100	9
CR .. ..	F./O. Rex Hayter .. ..	Avian .. ..	Hermes II .. ..	2 27 48	4 31 42	96	11
IY .. ..	Lieut. Rodd, R.N. .. ..	Puss Moth .. ..	Gipsy III .. ..	2 41 36	4 25 25	114½	7
VT .. ..	L. M. J. Balfour .. ..	Puss Moth .. ..	Gipsy III .. ..	2 42 02	4 21 46	119	3
	Capt. E. Percival .. ..	Hendy 302 .. ..	Hermes II .. ..	2 46 57	4 21 44	125½	2



closely until it was announced that of the original 14 starters 12 had arrived. The two missing were the two Civilian Coupés, both of whom had forced landings owing to engine trouble. Flight-Lieut. Tommy Rose was flying the first one to land, which he had to do when his engine cut out near Iwer, Bucks, and the result being an argument with a horse and hedge, finishing with the machine on its back. The pilot was not hurt. Mr. Dawson, who was flying the other one, got somewhat further, but finally had to sit down at Bradwell Hall, near Sandbach, Cheshire, and unfortunately the machine went on its nose when he did so, but with very little damage. After the arrival of the machines in the race, Capt. Wilson, the N.F.S. Pilot-in-Charge at Reading, gave a demonstration on the new interceptor-slotted Moth. The provision of interceptors is a new arrangement for ruining the lift on the wing which it is desired to depress, and the extra lateral control which Capt. Wilson had, at high angles of incidence with the slots in operation, was made very evident. Then there was a series of demonstrations of the various types of aircraft present. These mostly took the form of simply flying round with a few loops or so, and the machines shown were the Redwing (Genet II); Puss Moth (Gipsy III); Bluebird (Gipsy III), this being the same machine as Mrs. Victor Bruce has entered in the King's Cup race; the latest Comper Swift (Pobjoy); an Avian (Hermes); and a Spartan (Gipsy II). A humorous element was then introduced by an obstacle race for the visiting pilots. This took the usual form of crawling through barrels and a tarpaulin, eating treacly buns, and so on, and was eventually won by Mr. E. C. Brown during a respite from his arduous job of announcing.

Events now became still more drawn-out and the interest of the crowd definitely began to flag. There was a demonstration of the Red Cross Desoutter, while the machines which had entered for the two-lap race round Blackpool were lined up. This was two-laps of a course of about 17½ miles, and was won again by Col. L. Strange, with Miss Winifred Spooner second and Capt. Percival third.

F/O. Leech then gave a really pretty display of aerobatics on the Martlet (Genet II), which he had flown up in the big race. The climb of the Martlet is really astonishing, and, being as it is the only British light aircraft built primarily for aerobatics, it was, so to speak, in its element.

The last item on the programme was a parachute descent by Capt. Stewart. Those who did not know Capt. Stewart assumed that the jump would not be made, since the weather was now very bad, it blowing quite hard with large rain clouds forming and coming down to less than 800 ft. Capt. Stewart, however, is not the man to be deterred by little details like that, for he had spent a very considerable time working out his drop, not only with figures, but also with diagrams, and, providing he had been able to judge the wind speed correctly, he felt quite confident of making it successful. In this he was

right, and it was undoubtedly the best judged drop we have ever seen. He jumped actually in the clouds well out over the spectators, and landed beautifully well into the aerodrome exactly where he meant to without having to resort to side slipping or anything else. It was unfortunate that this had been left to the last because by now fully half the spectators had gone home, for, although we do not agree with parachutes being used for such purposes, yet we cannot deny that it is a thrill, legitimate or otherwise, which never fails to draw the crowd.

In the evening there was a civic dinner given in the Winter Gardens at Blackpool, at which all the visiting pilots were the guests of the Corporation. The speeches were somewhat long, as was the toast list, and space does not allow us to report them here. The Mayor, Alderman Tomlinson, J.P., was, of course, in the chair, and after the Loyal Toast proposed "Our Guests." Those who replied were Capt. Norman Blackburn, Herr Kronfeld and Mr. Alan Goodfellow; a very representative list, since Capt. Blackburn represents the trade, Herr Kronfeld the gliding interest, and Mr. Goodfellow the private flying interest. Both Capt. Blackburn and Mr. Goodfellow have been connected with Blackpool for many years, the latter apparently being at a preparatory school there and having broken out one day to see Latham fly, while the Lancashire Aero Club, which owes him so much, was also first formed at Blackpool until it moved to Woodford, in Cheshire, in 1928. After this toast the Mayoress presented the prizes, for the arrival competition to Capt. Blake; for the Hanworth-Blackpool race to Col. Strange, Mr. Percival and Mr. Balfour-Col. Strange, in addition to a cheque, received a beautiful gold cigarette box as a special prize from Sir Lindsay Parkinson; for the race round Blackpool, the first, second and third prizes were given to Col. Strange, Miss Winifred Spooner and Capt. Percival, the first prize being a large trophy given by the Corporation. Prizes were also given to Mr. E. C. Brown, Mr. S. Light and F/O. Snelling for the obstacle race. There was also a special Cup given to Miss Hayward as being the recipient of the first "A" licence obtained at the Blackpool and Fylde Aero Club.

Success to the "Blackpool Municipal Aerodrome" was proposed by Col. the Master of Sempill, and replied to by Sir Lindsay Parkinson and Councillor Parkinson.

Mr. J. G. Peel, the Chairman of N.F.S., supported by Capt. Pennington, then proposed the "Mayor and Corporation of Blackpool," who himself replied, and was supported by that forceful personality Alderman Tom Bickerstaffe. Alderman Bickerstaffe is, incidentally, the publicity man for the Corporation, and has done a very great deal towards the success of the Municipal Aerodrome, the Blackpool and Fylde Club, and, in fact, the whole undertaking.

A dance which had been arranged in the Winter Gardens to follow the dinner was well attended, and formed an enjoyable winding-up to the meeting.

**MANUALLY OPERATED.**—The cockpit of a D.H. "Moth," which has been specially built for Capt. Chevalier Willy Coppens, Order of St. Leopold, D.S.O., M.C., Légion d'Honneur, Belgian Air Attaché in London and Paris. It will be seen from the accompanying illustration that the controls have been arranged to obviate the use of a rudder bar, since Capt. Willy Coppens has had the misfortune to lose a leg. The wheel is rotated to work the rudder, and the whole column worked sideways and fore and aft in the usual manner for ailerons and elevator. The "bird-cage" on the left is a special map-holder.



The cockpit of the D.H. "Moth" which has been specially designed for Capt. Chevalier Willy Coppens, and to which we refer above.

(FLIGHT Photo.)

**BROOKLANDS.**—The Advanced Flying Instructional Course which has been made a feature at Brooklands has been patronised to an overwhelming degree by many well-known pilots, who feel that they would benefit from a little dual with an instructor who has specialised in the observation of and in eradicating faults which pilots are likely to develop after having flown for some considerable period. During last week three pilots made their first solo flights. The school's youngest lady pupil, Miss Barbara Grubb, gained her "A" licence, and Mr. John Chapman passed the tests for his "B" licence.

The sales department has also been doing good work and has sold six machines during the last fortnight, in spite of the much discussed trade depression.

Arrangements for the reunion of pre-war Brooklands pilots are going ahead fast, and quite a large number have signified their intention of being present. The management wish it known that everyone connected with pre-war flying at Brooklands is invited to the reunion, whatever their subsequent flying experience has been.

**THE KING'S CUP AT DESFORD.**—The Leicestershire Aero Club in their usual go-ahead manner have arranged to provide breakfast for those who have previously signified their intention of arriving at the aero-

drome for this purpose on the day of the King's Cup, July 25, between 7.30 and 8 a.m. Desford is, of course the first turning point, while Castle Bromwich, which is one of the later turning points, is only a quarter of an hour's flight from there, so that those arriving by air should be able to continue on to the latter place and still arrive back at Heston in time to see the finish.

As usual, a considerable amount of flying has been in progress amongst the club members lately, and Mr. H. C. C. Macleod, one of the three winners under the Tatler scheme, went solo on Saturday, July 11. Mr. E. C. Kendall, another member, also made his first flight alone.

**THE RAMSGATE AIR RALLY.**—It has been found impossible to hold the Ramsgate Air Rally at Nethercourt Aerodrome on July 18 as had been arranged, but permission has been obtained to hold it on a portion of Manston Aerodrome. The course for the air race round Thanet will be as already advised, but with Manston substituted for Nethercourt. Visitors should note that landing fees will be defrayed by the Air Rally Committee.

**CARDIFF FLYING CLUB.**—All private owners will be cordially welcomed at a meeting to be held by the Cardiff Flying Club at Wenvoe Aerodrome, near Cardiff, on August 1.



## GLIDING



**NORTH COTSWOLD GLIDING CLUB.**—The North Cotswold Gliding Club will be holding a demonstration at the club gliding ground, one mile from Broadway Tower, Worcestershire, on Saturday and Sunday, July 25 and 26, starting at 2.30 p.m. each day. Mr. Lowe-Wylde will be present with his two-seater B.A.C. VII, and will give demonstrations of auto-towed gliding.

**GLIDING AT BEAMSLEY BEACON.**—Owing to lack of support and the small number of visiting machines, there were no competitions held during the days of the Conference. The Harrogate Club's Dickson glider, however, made several flights of about 5 min. duration, and also a Prüfling, belonging to Mr. Thompson, made extended flights, landing above its starting point. On July 11 the Scud which Mr. Baynes had brought up was flown by Mr. Allen and made several flights of from 15-17 min. duration. The Scud apparently created a lot of interest in the district,

since its handiness makes it ideal for that type of terrain. We understand that at least one order has already been booked for one of these machines.

**AN AUSTRALIAN GLIDER.**—Mr. W. S. Shackleton is responsible for the glider shown below, which has achieved considerable success in Australia. It was the best performer at the big meeting held at Tower Hill, Koroit, Victoria, when it made a flight of 1 hr. 35 min. against the next best of 40 min. or so.

The spring ash skid is particularly interesting, as it is bolted firmly at the front end and is provided with two rubber compression blocks giving about 3-in. travel in the middle. It is absolutely rigid laterally, and works extremely satisfactorily. The wing loading of this glider is 2 lb. per sq. ft., while the sinking speed is 2.7 ft. per sec., giving an optimum gliding angle of 1 in 17, with a gliding speed of 34 m.p.h. The aspect ratio being 8.



The Shackleton glider which has been found excellent for training and also for more advanced work in Australia. It is obvious that cheapness in production has been borne in mind in the design, which should make it very suitable for clubs.

(Photo by courtesy of "The Argus" of Melbourne, Australia.)



# MONOSPAR WING FOR FOKKER F.VII-3 M

For an Aircraft Gross Weight of 8,000 lb., a Wing Area of 630 sq. ft., an Aspect Ratio of 6.4:1, and a Wing Loading of 12.8 lb./sq. ft., this Wing weighs 820 lb., or 1.3 lb./sq. ft., which is 10.2 Per Cent. of the Gross Weight

“**R**EVOLUTIONARY” and “epoch-making” are terms which have frequently been applied to new discoveries or ideas in aviation. Usually it has been found that they were not. At best, they have marked a small step forward in the general and gradual—*very* gradual—improvement of aircraft. The Mono-Spar Co., Ltd., has never, to the best of our knowledge, made any such extravagant claims for the type of wing construction invented by Mr. Stieger. And yet the monospar construction promises definitely to go a very long way towards real commercial aviation. No form of construction, nor any suggestion for improvement that we have heard of, has achieved a saving in weight which would increase the pay load of an 8,000-lb. gross weight machine from 17.65 per cent. of the gross weight to 24.2 per cent. In actual figures, the saving in weight amounts to 530 lb., which is the equivalent of three passengers. In other words, a machine which needs a subsidy to make both ends meet is brought within measurable distance of being able to “fly by itself.” And all this not by complicated and super-refined construction, but merely by what most engineers will agree is a

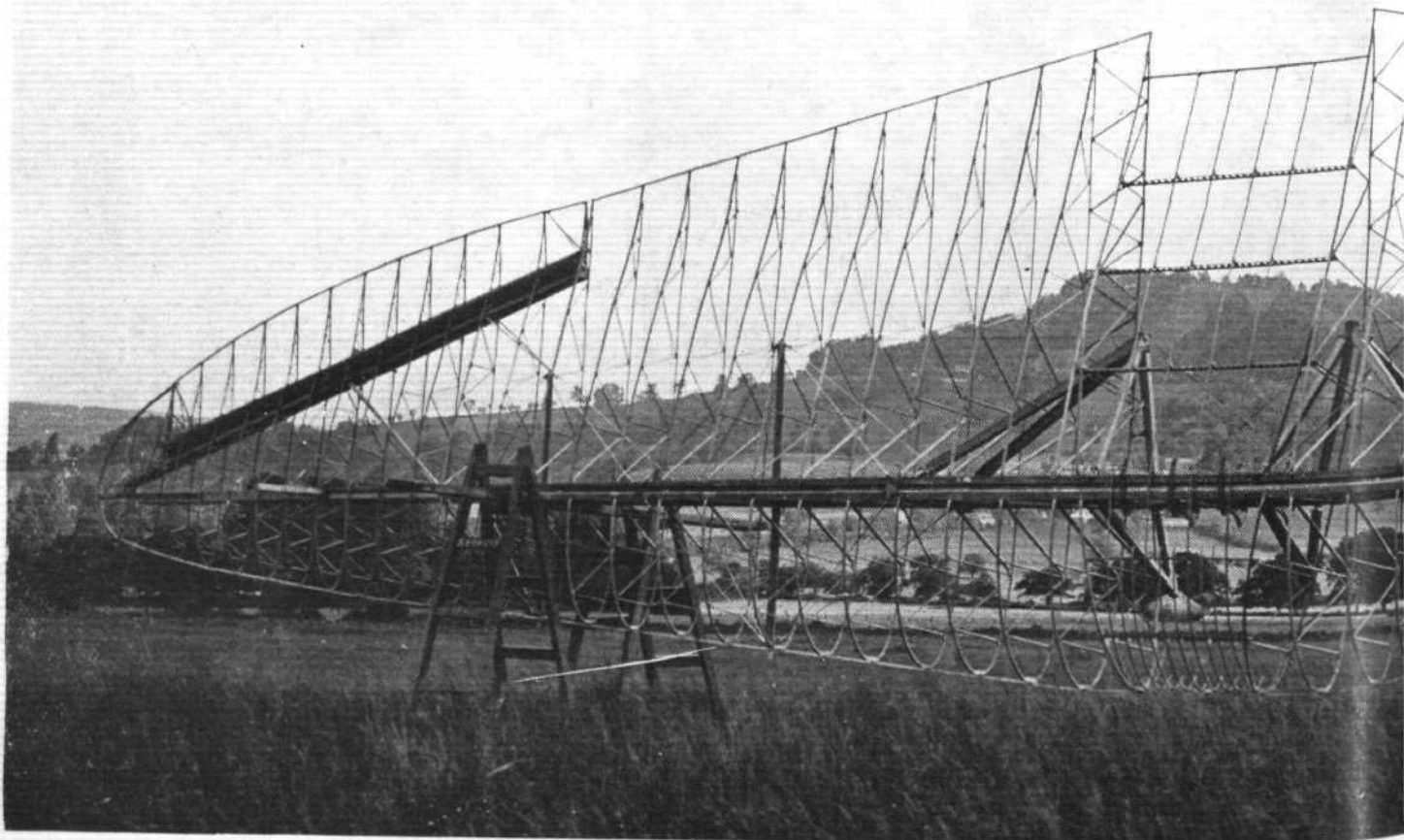
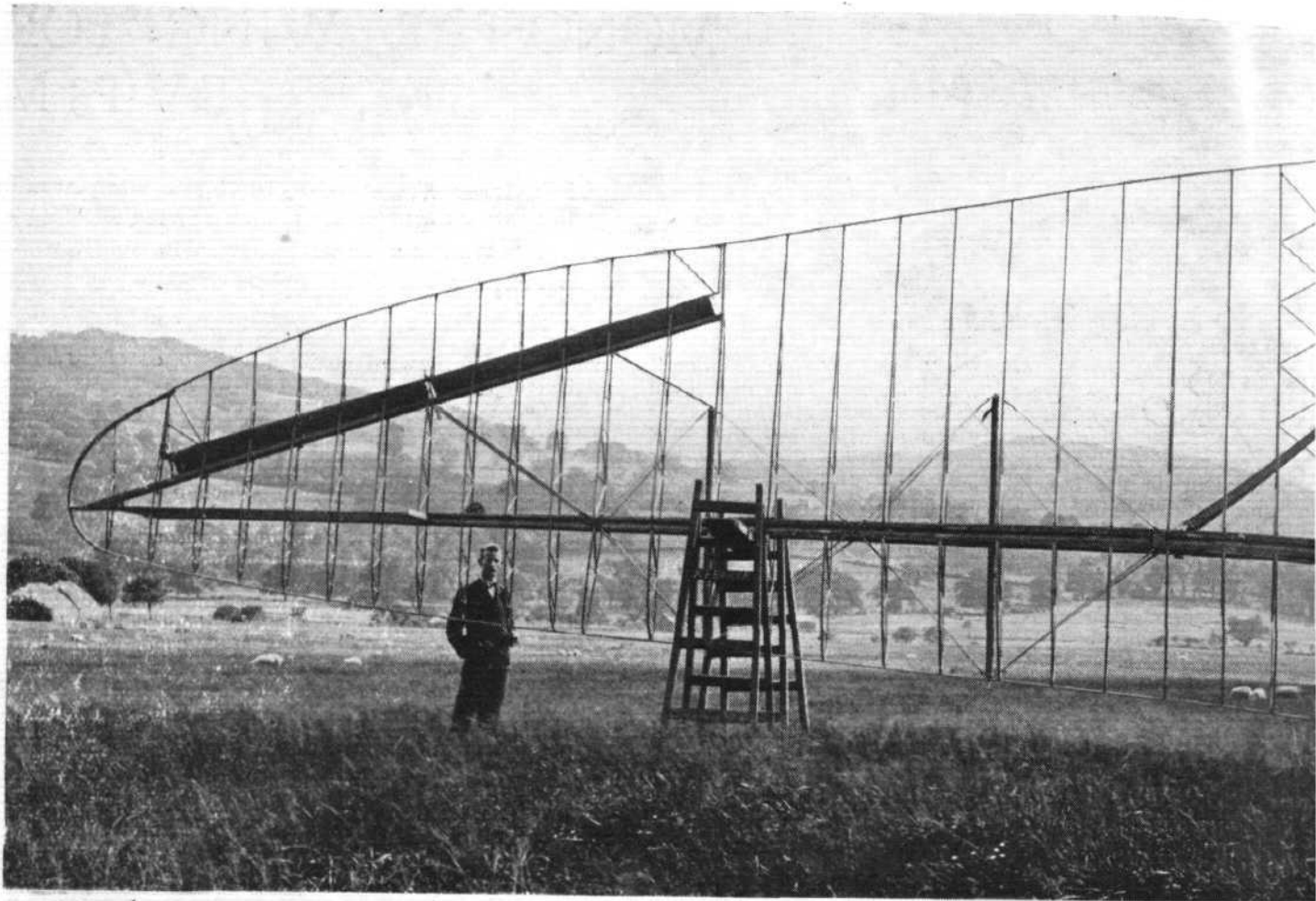
simple, straightforward common-sense piece of structural engineering.

In our issue of June 19, 1931, we published a brief article, illustrated by photographs of the spar of the new wing which has been designed by the Mono-Spar Company and built by the Gloster Aircraft Company, to be fitted on a Fokker F.VII-3M. (Lynx), which belongs to the Air Ministry. Last week we had an opportunity of visiting the Gloster works at Hucclecote to inspect the wing in skeleton, just as it was being mounted on the fuselage of the Fokker machine. This wing has been built in order to obtain a comparison between the standard Fokker wooden wing and the new all-metal monospar wing.

The Lynx-engined Fokker F.VII-3M. monoplane has a gross weight of 8,000 lb., with a pay load of 1,405 lb. The new wing has been designed for the same gross load, but is 530 lb. lighter than the Fokker wing, thus increasing the pay load by that amount. The monospar wing is not an exact copy of the Fokker wing in its proportions, *i.e.*, it has a much more pronounced taper in plan view than the standard Fokker wing. The span and area are, however, the same. The wing section used is also dif-

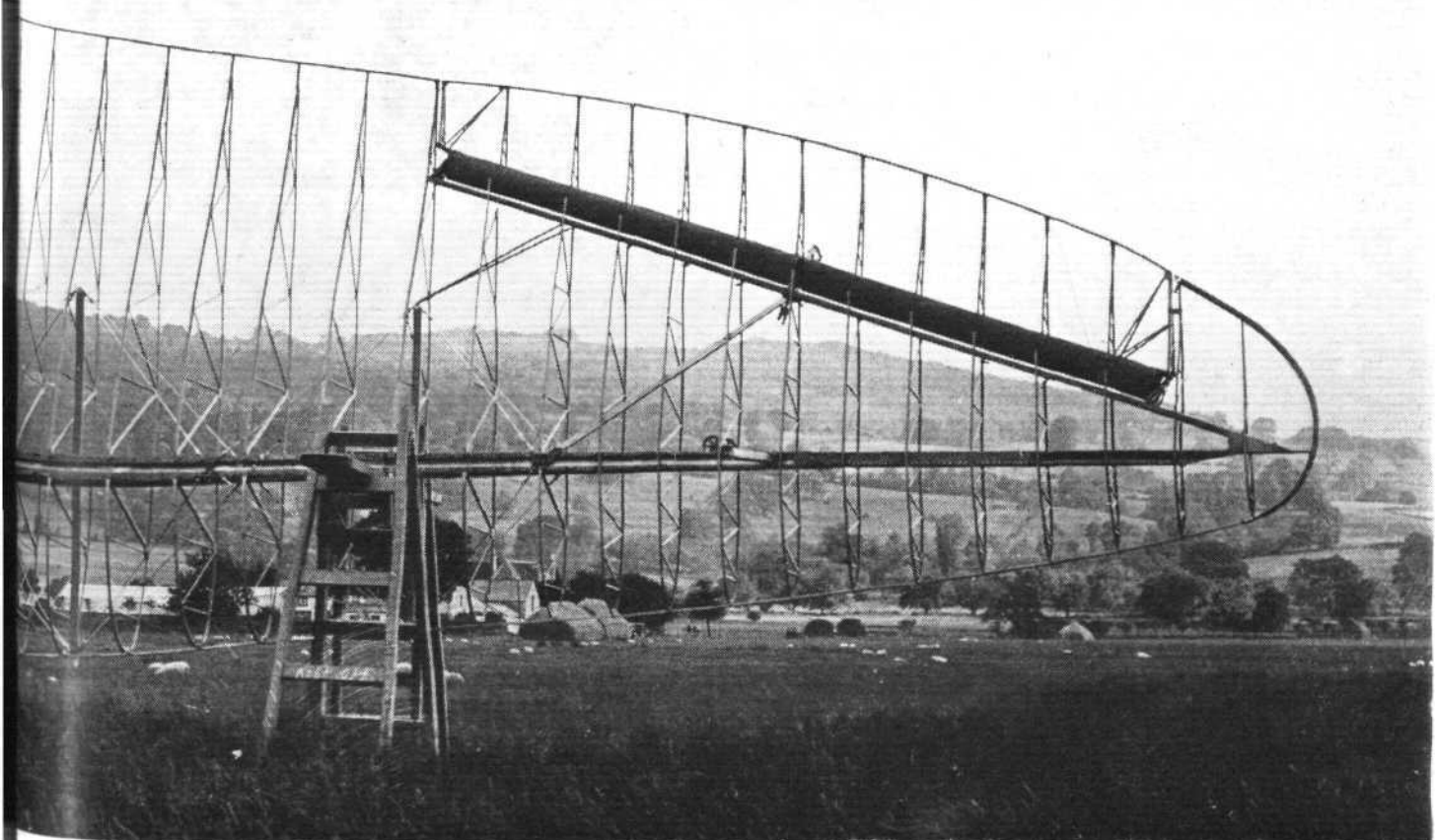
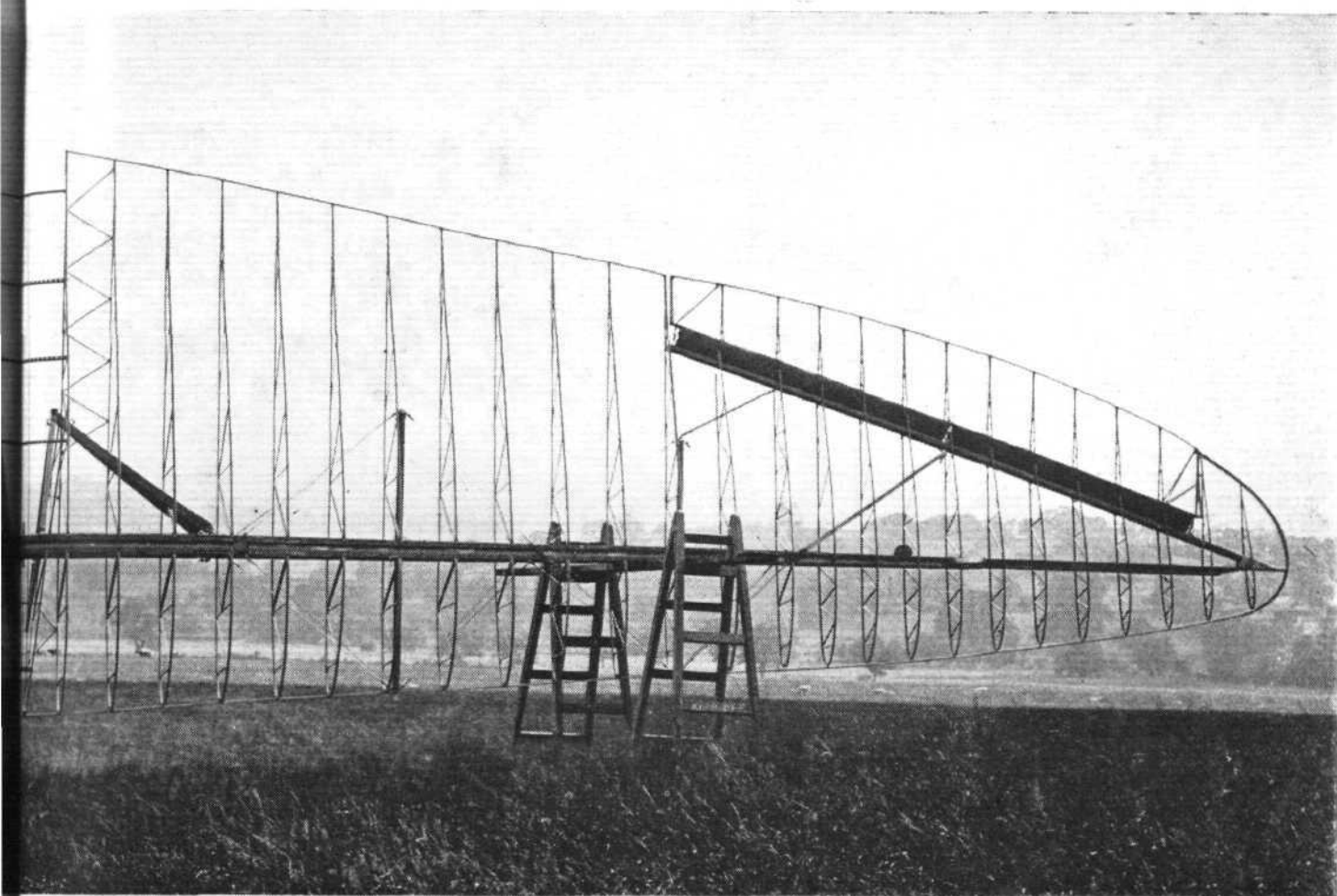


THE PYRAMID BRACING: THE TUBES OF THE TORSION BRACING ARE LIGHTLY LOCATED AT THEIR CENTRES, WHERE THEY PASS THROUGH THE SPAR. THIS PHOTOGRAPH ALSO SHOWS SOMETHING OF THE SPAR CONSTRUCTION. (FLIGHT Photo.)

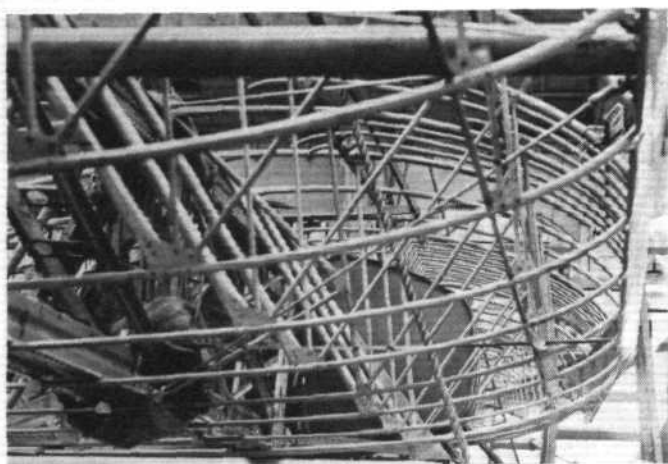


THE MONOSPAR FOKKER WING IN SKELETON: THE UPPER PHOTOGRAPH SHOWS WELL THE SINGLE SPAR, AND ALSO THE WING PLAN FORM.



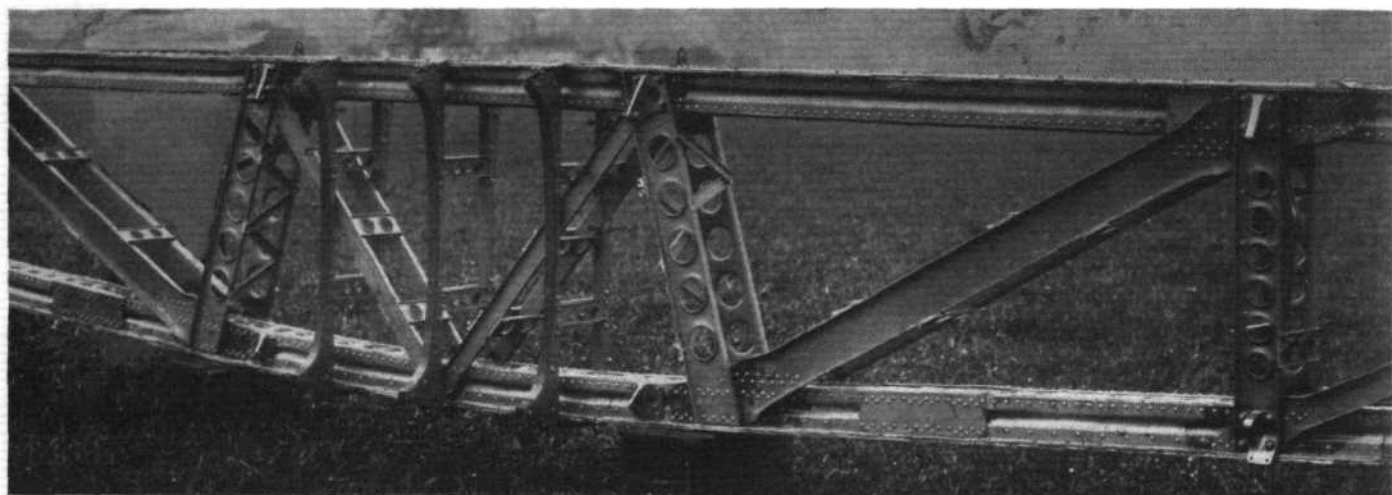


IN THE LOWER PHOTOGRAPH CAN BE SEEN SOMETHING OF THE RIB CONSTRUCTION, AND ALSO THE DIAGONAL MEMBERS SECURING WING TO FUSELAGE.



**MONOSPAR WING IN SKELETON: THIS PHOTOGRAPH, TAKEN WHILE THE WING WAS BEING MOUNTED ON THE FUSELAGE, SHOWS ONE OF THE TANKS IN FRONT OF THE SPAR. (Flight Photo.)**

ferent, being one with a nearly stationary centre of pressure. How its maximum lift coefficient compares with that of the Fokker we do not know. If it is markedly lower, so that the stalling speed becomes appreciably higher, the comparison becomes a little unfair to the Fokker. It is likely, however, that there will not be very much difference in this respect.



**DETAILS OF THE SPAR: THE SPAR BOOMS (DURALUMIN) ARE BUILT UP BOXES, AND THE BRACES ARE PLAIN DURALUMIN CHANNELS.**

It may be recalled that, put very briefly, Mr. Stieger's monoplane type of construction is based upon the use of a single main spar made strong enough to take the bending loads. Such a spar, however, is obviously weak in torsion, and would not unaided produce a stable or rigid wing. Torsional strength is provided by a "spiral" wiring system which may be imagined as being made up of a series of kingposts and two sets of wires, the wires from the front ends of one kingpost to the rear end of adjacent kingposts crossing each other on the outer face of the spar, to which they are attached. It is not essential that the attachment between spar and kingpost centres should be a strong and rigid one. In fact, it is not necessary to the stability of the structure to have the kingposts attached to the spar at all. In the wing for the Fokker they are lightly secured to the spar, but this is merely to locate them, and to reduce the stresses in the kingposts by reducing their free length.

It will be obvious that such a girder, consisting of spar, kingposts, and torsion bracing, has little strength against drag loads. In fact, none other than that of the spar itself loaded horizontally. In the monoplane wing for the Fokker, the strength in drag is provided by joining

the leading edge to the forward ends of the kingposts, this forming a tie which stabilises the structure against drag forces. A wire joining the rear ends of the kingposts serves as a "return wire" and anti-drag bracing.

The details of the monoplane wing for the Fokker are very simple. The main spar is a built-up beam, consisting of top and bottom booms and interconnecting braces. The latter are arranged to form a series of "N's," and are plain duralumin channel sections, the vertical braces being perfectly plain, while the sloping braces have the channel sides flattened out at the ends, where they are riveted to the spar booms. The spar booms are of built-up box section, with "Z"-shaped vertical strips and flat covering strips. Actually, the vertical strips are not quite plain flat "Z" sections, but have a corrugation running along them centrally for stiffness. And the outer covering strip is not quite flat either, but has a similar corrugation. Only the top boom is a closed box section, the inner cover plate being flat. The lower boom, which is in tension, is left open on the inner side. Not only so, but, as one goes from root to tip, the inner edges of the "Z" strips are cut away, first slightly, and then more and more as the tip is approached. The horizontal cover plates are tapered off, the spar tapering both in plan and elevation. The taper in elevation is, of course, obtained by bringing the spar booms closer together and shortening the braces. Thus, the material in the spar is used very economically, but little superfluous material being left anywhere.

With single-spar construction, one would be inclined to think that the ribs must be a little heavier than those of a normal two-spar wing. Actually, this is not the case, at any rate, in the monoplane wing built for the Fokker.

The wing section used is, as already stated, one having a very nearly stationary centre of pressure. The spar is, of course, located along the c.p. line, and so there is little c.p. travel to take care of. The ribs are tubular girders, and, owing to the monoplane construction, the nose and trailing edge portions are cantilevers overhanging from the spar. With this plain load distribution, the whole of the top rib boom is in compression, while the whole of the bottom boom is in tension. Consequently the top boom is made of larger diameter tube, as can be seen in the photographs. The result is a rib which is no heavier than a normal two-spar rib of the same chord.

The torsion bracing is in the form of plain duralumin tube kingposts and tierod bracing. The tubes are merely steadied at their centre, where they pass through the spar. The drag bracing is completed by a reinforced leading edge of duralumin sheet, which has a channel section riveted to it.

A certain amount of weight has been added by the necessity for the wing to "pick up" on the same four points as those used for the standard Fokker wing. For this purpose diagonal box-section members are used. These can be seen in the photographs.





M Jacques Dumesnil, the Air Minister, broadcasts from the Judges' Stand.

## THE CLERMONT-FERRAND MEETING

**F**AVOURED by perfect weather, the Seventh Annual Rally and the Eleventh Annual Meeting of the Aero Club of Auvergne took place at the Aulnat Aerodrome, just outside Clermont-Ferrand, on Saturday and Sunday, July 4 and 5 last.

Planes flew to Clermont-Ferrand on the opening day from all parts of France as well as from several foreign countries. A large number of machines arrived participating in the Rally, while many others made the trip as individual tourists. A number of speed and efficiency contests were held, some of them being fixtures for several years past, for which trophies and cash prizes were offered. Three leading stunt flyers also took part in the meeting and a spirited international contest developed between Pierre Lemoigne, one of the leading French aerobatic aces, Georges Lepreux, a young pupil of Marcel Doret, and Dr. Hans Gullman, who ranks among the best stunt flyers in Germany. There was a refreshing snap and go to the programme, which was rounded out by balloon punching, parachute jumping, etc. An additional interest was also added to the meeting by the presence of the Air Minister, Mr. Jacques Louis Dumesnil, and his staff, and Mr. Etienne Riche, the Under-Secretary of State for Air (Assistant Air Minister), all of whom arrived from Paris by plane.

The meeting itself took place on the Sunday and was preceded, as usual, the day before, by the International Rally, in which some 56 planes participated. The entries included Belgian, Swiss and German machines in addition to the French tourist planes. The aim of the Rally was to permit the pilots to make as long flights as possible in a given period of 8 hr., between the airports where they "took-off" and Clermont-Ferrand, while taking into account the number of persons transported in comparison with the h.p. of the motors of their planes. The contest was run under the formula  $\frac{L^2}{W}$ , in which the points

awarded the contestants were calculated on the basis of L representing the distance flown in kilometres, W representing the h.p. of the motor per person aboard the plane.

This Rally was won by John Portal, a pilot in the Farman Air Service, who flew a Farman 190 six-seater



**ANOTHER WINNER:** The D.H. "Gipsy Moth" of Louis Weber, Director of Geneva Airport, who won the George Dreyfus Speed Race.

monoplane equipped with 230-h.p. Gnome and Rhone "Titan" motor. His itinerary was Paris—Brussels—Amsterdam—Brussels—Amsterdam—Brussels—Paris—Clermont-Ferrand, making 1,589 km. (1,000 miles) in all. There were seven persons aboard his plane.

Leon Kammacker, a well-known Swiss pilot, representing the Aero Club of Switzerland and flying a De Havilland "Puss Moth," equipped with an inverted "Gipsy" engine, finished second. The plane had three persons on board and flew 1,619 km. (1,002 miles).

The Dewoitine D.35 plane, equipped with a 250-h.p. Wright Hispano engine, piloted by George Delage, and having Maurice Bellonte and Raymond Coty on board, together with four other persons, finished third, having flown 1,573 km. (997 miles).

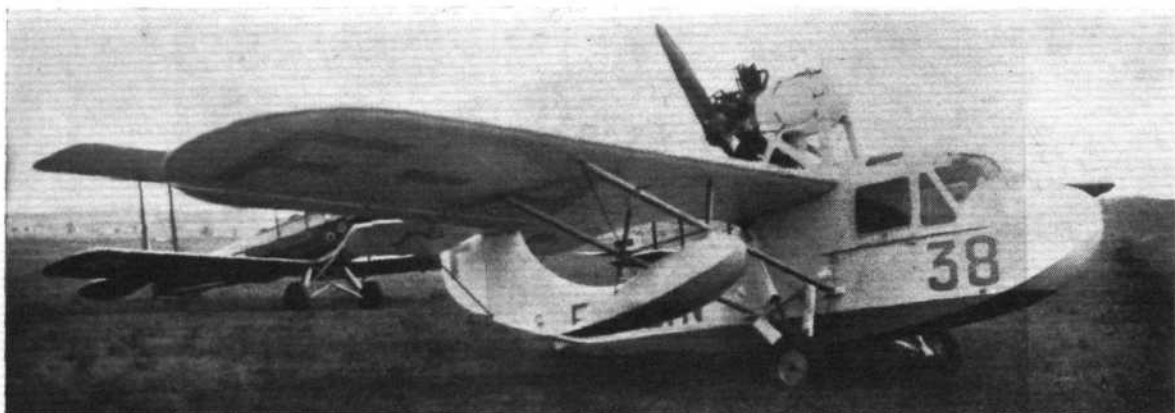
The eliminatory competitions for the fifth annual "Marquise de Seigne Cup" were also held Saturday afternoon. This handsome trophy has been offered to be competed for each year at the Clermont-Ferrand meeting by reserve pilots regularly enrolled in the various training centres throughout France. The contest consists of a rally of "patrols," consisting of two planes of the same type, manned by reserve pilots, flying to Clermont-Ferrand over a course taking about 4½ hr. from their point of departure. Each "patrol" is carefully timed, and the training centre of the one showing the greatest regularity is awarded the trophy for one year.

Eighteen patrols (36 planes), consisting mostly of Morane Saulnier 191's, parasol type, took part, and their arrival at the Aulnat Aerodrome made a pretty sight as they flew across the finishing line in pairs, one after the other.

The contest was won by a "patrol" from the Angers Training Centre, with one from the Lyons Training Centre



**A WINNER:** The Morane "Parasol" (230 h.p. Salmson) used by the winning pair in the Marquise de Seigne Cup Efficiency Competition.



**A FRENCH AMPHIBIAN:** The Schreck 310 (120 h.p. Lorraine) two-seater amphibian.

finishing second and one from the Montpellier Training Centre third.

One hundred and fifty planes were ranged in rows along the Aulnat Aerodrome when the meeting itself opened on the Sunday afternoon. The broad plateau of the aerodrome had been fenced off and a good-sized grand stand erected at its easterly end, with a judges' stand in front of it. There were also several enclosures containing reserved seats. Loud speakers had been installed all around the field and the spectators were kept well informed of all the events by Captain le Petit, the official announcer of the Aero Club of France. The attendance was very good, all the enclosures being filled and the crowd standing around the field some 5 to 6 rows deep.

The meeting opened with a presentation of the winning planes of the Rally, which flew before the grand stand and were then ranged in front of it. There was a handicap speed race for a purse of 6,000 francs, offered by the Paris daily newspaper *Le Petit Parisien*, consisting of three laps of about 7 miles each around neighbouring points. The finish was in front of the grand stand. The first prize was won by Henry Massot, flying a Guerschais cabin monoplane, Ferdinand Lasne on a Nieuport-Delage 641 cabin monoplane being second, and Count of Montigny, flying a Morane "Moth," third.

Pierre Lemoigne then gave a remarkable exhibition of stunt flying on his Gourdou-Lesurre pursuit plane, Gnome and Rhone "Jupiter" 420-h.p. engine. Tying tricolour ribbons around his wrists, Lemoigne "took-off" without touching the controls of his plane with his hands, which he held high above his head. He then encircled the field and performed all the usual aerobatic stunts, such as flying on his back, climbing, nose diving, looping, etc., with the

ribbons fluttering from his wrists, which were held high above the cockpit, the pilot apparently controlling his plane by his feet and knees.

Dr. Hans Gullman also gave a very good exhibition of trick flying on his Raab RK.26 biplane, equipped with a Walter 240-h.p. motor. Dr. Gullman's suppleness in handling his plane, especially in looping while flying on his back and doing barrel rolls, etc., were greatly admired by the spectators. Georges Lepreux, a young pupil of Marcel Doret and flying Doret's well-known D.27 plane (400-h.p. Hispano-Suiza) also performed some excellent stunt flying.

The Grand Prix for tourist planes, for which Mr. Georges Dreyfus added a cash prize of 5,000 francs, was flown towards the end of the meeting. It consisted of a speed race over a course starting from the Aulnat Aerodrome, encircling the summit of Puy de Dome, an adjacent mountain some 5,000 ft. high, and return, making about 100 miles in all. The contest was won by the Swiss pilot, Jacques Weber, flying a De Havilland "Moth," Gipsy 85-h.p. engine, Marc Bonet, also flying a De Havilland "Moth," came in second, and the Count of Montigny on a Morane "Moth" came in third.

In the balloon-punching contest, Rene Lefevre, the Transatlantic flyer, flying a Potez 36 cabin monoplane, 95-h.p. Renault engine, destroyed three balloons in 1 min. 9 sec.; Jacques Webber, flying his De Havilland "Moth," destroyed three balloons in 1 min. 47 sec.; and Georges Hanet, flying a "Puss Moth," destroyed two balloons in 18 sec.

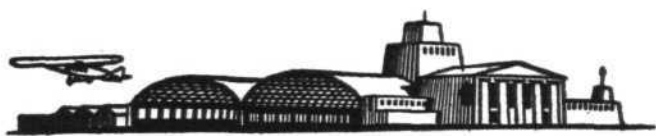
A parachute descent by Jean Leduc and some manoeuvres by a pursuit squadron from the 35th Aviation Regiment closed a very successful meeting.

R. C. W.



**RIVAL AEROBATICS:** On the left, the Raab R.K. (240 h.p. Walter), flown by Dr. Hans Gullman, of Germany, and on the right the Gourdou-Lesurre (420 h.p. Gnome-Rhone "Jupiter"), used by Pierre Lemoigne, of France. Both pilots gave fine demonstrations of aerobatics.





# AIR TRANSPORT



## WIBAULT-PENHOËT 281 T. 12

3 Gnome-Rhone "Titan Majors"

AMONG the aircraft exhibited at the last Paris Aero Show was a three-engined commercial monoplane designed by M. Wibault. The machine was remarkable chiefly for the use of an absolutely smooth wing covering of light alloy, which was claimed to have resulted in a material increase in speed compared with the ribbed covering previously employed by M. Wibault on his machines. At the time of the Paris Show the new machine had not yet been thoroughly tested, but it has now been through the official tests of the *Section Technique* at Villacoublay, and some rather remarkable performances have been established.

The Wibault Penhoët 281 T.12 is an all-metal three-engined low-wing commercial monoplane, fitted with three Gnome-Rhone "Titan Major" engines, type K.7B., of 300 h.p. each. With fuel for a range of 600 miles, the machine carries pilot, wireless operator and 10 passengers, and 660 lb. of luggage. As a result of the official tests, the makers (Chantiers Aéronautiques Wibault-Penhoët, of 7, Rue Auber, Paris 9<sup>e</sup>) claim that the 28 T.12 is the fastest three-engined commercial aeroplane in the world. Whether that claim is justified is, perhaps, open to doubt, and some of the Ford three-engined models may be as fast or a little faster. But, at any rate, the Wibault-Penhoët certainly is fast, according to the *Service Technique* figures. For instance, near the ground the officially measured maximum speed, with the engines running at

the normal power required for the 50 hours' type tests, is 148 m.p.h., while the cruising speed is 130 m.p.h.

The machine is claimed to be capable of flying on two engines at 9,000 ft., and on one engine at 1,300 ft.

According to Cidna requirements, a machine must clear a barrier 65 ft. high in a run of 600 yards from standing start. The 281 T.12 actually cleared 94 ft. The maximum time permitted by the Cidna regulations for reaching 360 metres (1,180 ft.) is 3 minutes. The 281 T.12 reached that height in 1 minute 59 seconds.

Following are the performance figures of the Wibault-Penhoët 281 T.12 issued by the French Air Ministry :—

Altitude.	Time.	Rate of Climb.	Speed.
Ft.	Min. sec.	Ft./min.	M.p.h.
0 .. ..	—	—	148·0
2,000 .. ..	3 36	630	146·5
3,000 .. ..	5 00	600	143·5
4,000 .. ..	6 39	570	142·0
5,000 .. ..	8 09	565	141·0
10,000 .. ..	18 24	409	131·5
15,000 .. ..	40 00	136	110·0

The absolute ceiling is 17,225 ft.

# "MEET HANNIBAL"

Our Contributor was one of a Party of Press Representatives who made the flight to Paris and back with "Hannibal" last Friday. Below he sets out his impressions, and it will be seen that he regards "Hannibal" as a great step forward in the matter of comfort

ON Friday, July 10, Hannibal, the latest and greatest addition to the Imperial Airways fleet, gave a demonstration of his capabilities to a critical "cargo," to wit, a party of sixteen Press representatives (presumably "our air correspondents"), who flew with him, at the invitation of Imperial Airways, Ltd., to Paris and back. To use any other preposition than "with" would be an offence to his Imperial dignity—one does not fly "in" or "by" Hannibal, but accompanies him on his conquests in a new field as a privileged being.

In order to demonstrate the actual service available to the air-travelling public, it was arranged that the party should assemble at Airways House at 8.15 a.m., and proceed thence to Croydon Air Port in one of the luxurious coaches that are now a familiar sight to most Londoners, particularly those who live on the south side.

The "cargo," which included the writer, assembled at the appointed hour, was weighed (and not found wanting), and was duly wafted to Croydon, the combined bulk of the party being 'phoned on in advance.

Following the usual passport formalities, we were first introduced to the pilot, Capt. Wilcockson, and then to Hannibal. The majority of our readers have probably followed closely the progress of Hannibal during the past two years through all his various stages of development, from the chrysalis, as the mock-up cabin shown at Olympia in July, 1929, might well be termed, to his first flight tests at Radlett during last autumn, and finally to his recent freight and passenger-carrying flights on joining the Imperial Airways fleet. It may be recalled that Hannibal is the first to be delivered of eight Type 42 Handley-Page four-engined machines ordered by Imperial Airways for service on the European routes, and also on the desert section of the India route; the four machines which will be employed on the latter route differ from the other four in the arrangement of the passenger accommodation, twenty of the thirty-eight passenger seats of the Western or European type being sacrificed for mail and baggage in the Eastern type. Hannibal is of the



The Forward Cabin of the "Hannibal" (Eastern Type), looking aft. (FLIGHT Photo.)

Eastern type—the fore and aft cabins have accommodation for six and twelve passengers respectively, the intermediate portion being provided with a central communicating corridor, on the port side of which is a steward's bar and a quite commodious lavatory with tip-up wash basin, whilst the whole of the starboard side of the intermediate portion forms the baggage and mail space. Hannibal stood awaiting us, with his four Jupiter engines ticking over and his nose elevated at a somewhat scornful angle; as seen at close quarters on the ground, he is not particularly handsome. Owing to his great size, it is difficult to appreciate his proportions, except at a considerable distance; as seen from the ground, or preferably from another plane, he appears quite graceful in flight, his low and very long fuselage giving the impression of his being a flying boat.

Promptly at 9.15 the passengers having taken their seats, the chocks were removed, the engines opened out, and we were racing across the aerodrome and off the ground with an incredibly short run, and, climbing at what appeared to be a considerable angle, we entered a belt of cloud at 1,000 ft. In the fore part of each passenger cabin there is provided a set of instruments, comprising a clock, altimeter, and airspeed indicator, from which it was observed that 4,000 ft. was reached just within a quarter of an hour from taking off. We continued to climb steadily until 7,000 ft. was reached as we crossed the English coast at Hastings, just half an hour after taking off. Capt. Wilcockson had set a course lying considerably farther south than the usual London-Paris route, which crosses



IN THE "HANNIBAL": The After Cabin, looking forward, (FLIGHT Photo.)





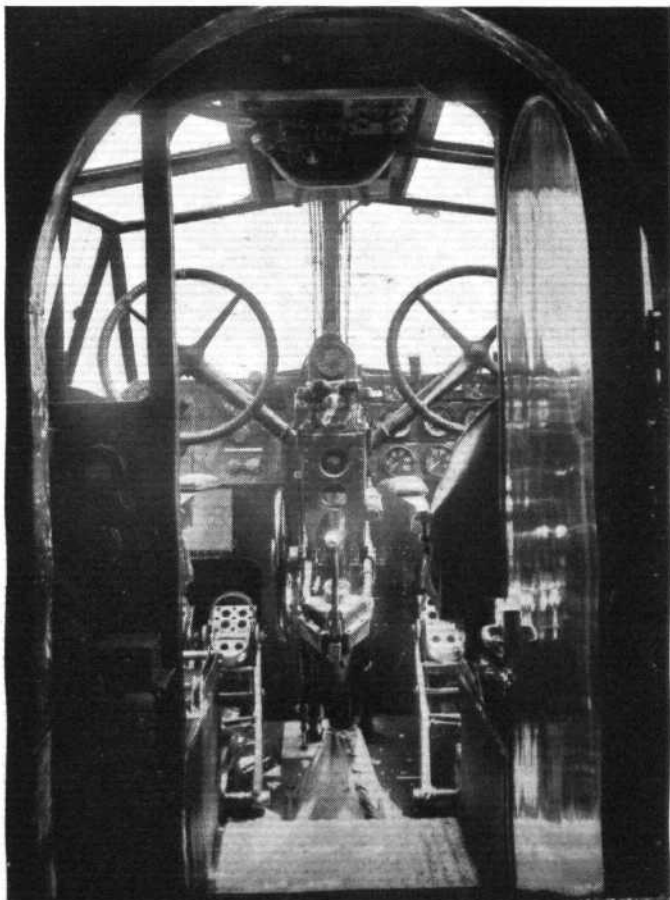
**"Owing to his great size it is difficult to appreciate Hannibal's proportions, except at a considerable distance; as seen from the ground, or preferably from another plane, he appears quite graceful in flight."** (FLIGHT Photo.)

the coast at Dymchurch. Over the Channel the gaps between the clouds became larger, and we were able to watch the shipping and the curious etched or stippled appearance of the surface of the water with the sun shining brilliantly on it. One should have mentioned earlier the impressions gained within the cabin rather than what was happening outside, but, in actual fact, all the party were so busy trying to locate our position over Kent through the occasional breaks in the clouds that it was not until we were crossing the Channel that we began to notice things within the cabin. The opportune appearance of the steward with drinks and light refreshments assisted considerably in this direction. Regarding the comfort of the passengers, it is no exaggeration to say that it could hardly be bettered in any respect—the ample chintz-covered seats are comfortably arranged in pairs, with padded arms and head-rests. A small table, complete with tumbler holder and flower vase, is arranged between each opposing pair of seats. The solid-feeling floor is carpeted, and is warmed when necessary from below, whilst horizontal air shafts above the windows admit fresh air to the cabin through a series of adjustable ventilators, one above each window, so that the passengers may themselves control the ventilation of the cabin. The arrangement of the windows, and more particularly the position of the cabins relative to the lower planes, permits an excellent view downwards and forwards; the upswept lower centre sections of the planes assist materially in this respect. Finally, there remain the all-important questions (from the air-traveller's point of view) of noise, vibration and steadiness, and it is in these respects that Hannibal excels. In a leaflet supplied by the organisers of the demonstration it was stated that the noise heard by the passengers is "not greater" than that experienced in an express train—that appears to be a curiously negative way of putting it—actually there is no comparison. The noise in an express train can only be described as a clattering racket, with a monotonous beat as the coach sways and jolts over the metals. The steady drone of Hannibal's four geared and moderately supercharged Jupiters has been so effectively deadened by the special precautions taken in the arrangements and construction of the cabins that it is merely noticeable, but not in the least irritating; nor does it interfere at all with conversation. Furthermore, it was surprising to notice a complete absence of "beat" phasing such as occurs in twin-engined craft. As seen from the amidships portion of the fuselage, where, of course, there is considerable noise, the four-bladed propellers appear to be taking life very easily at their normal cruising revolutions. On the score of steadiness, it is libellous to compare Hannibal with an express train—

pouring out a cup of tea in a train travelling at 65 m.p.h. is a hazardous undertaking—Hannibal allows you to do it at 100 m.p.h., as though you were seated at your breakfast table. Apart from a slight drumming of the thin table top, which caused a shimmer on the surface of the liquids (various) in our glasses and cups over the Channel, there was no movement; stood on the floor the surface was undisturbed by vibration. This little test was possibly the most interesting and convincing that could be devised to demonstrate Hannibal's advance over other civil aircraft. In the matter of steadiness one, of course, has to take the prevailing air conditions into account; at 7,000 ft. we were enjoying brilliant sunshine and a slight but steady following wind, which fact demonstrates yet a further point in favour of air travel—the pilot can choose his "track" to ensure the most comfortable conditions. Unfortunately our pilot spotted a rival plane, the Golden Ray of the Air Union line below, and we dropped rapidly from the 6,000 ft. at which we crossed the French coast near Paris Plage to between 2,000 and 3,000 ft. The

Golden Ray left Croydon shortly before our departure, but, as we watched it from the port side of the cabin, it was clear that we should reach Le Bourget a little ahead. We were then travelling at an air speed of 105-110 m.p.h. through patchy clouds, and the irregular bumps made things a little less happy aboard.

At 11.12 a.m. we landed perfectly at Le Bourget, having completed the trip in just under the two hours,



**"THE OFFICE":** The pilots' seats are placed side by side, and engine controls and wheel brake lever placed centrally, within reach from both seats. The airspeed indicator is also centrally placed. (FLIGHT Photo.)

the maximum air speed reached as Paris came into sight being 132 m.p.h. It was then that the really exciting part of the journey began—to those who know the perils of driving through Paris traffic the comparative safety of the air will be well understood. Actually we appear to have created something of a record in getting through the Imperial Airways headquarters in Rue de l'Opera, having had only a minor collision with one taxi.

After lunching as the guests of Imperial Airways at the Hotel Chatham, the party broke up until 3 p.m., when we reassembled and sped out to Le Bourget for the return flight, Hannibal taking off at 4 p.m. precisely. The sky was heavily overcast and a fresh N.W. wind had sprung up. Our rate of climb was even more remarkable than when leaving Croydon, 4,600 ft. being reached in the first seven minutes. For an hour we continued to climb steadily above a thick cloud bank, which blotted out France completely, until 11,500 ft. was reached. Tea was in progress when about mid-Channel, through a break in the clouds we could see both coasts simultaneously. The flight over France in brilliant sunshine above that white blanket was not without interest, for the beauty of the cloud formations simply beggars description. At 5.40 p.m. we crossed the English coast directly over the point of Dungeness at 8,800 ft., the remainder of the journey over Kent being made most

interesting by virtue of the excellent visibility, small fluffy clouds only obscuring the view occasionally. At 8,000 ft., locating our position on the maps thoughtfully provided for each passenger, was an easy but fascinating amusement. From 8,000 ft. we commenced a gentle glide towards Croydon, and, spiralling anti-clockwise over the aerodrome, we touched at 6.40 p.m.; the pilot, however, was not satisfied, and opened out, immediately taking Hannibal up to 1,000 ft. in a wide sweep over the aerodrome. It was observed during the last portion of the glide that the auto-slots provided in the upper planes appeared to be in some doubt as to whether they should open or not—this was the only occasion during either trip when they appeared to come into operation at all. This time a perfect three-point landing was made, the tail wheel actually touching an instant before the main wheels. It had been a splendid flight back, and although actually it took 40 minutes longer than the outward journey, it seemed all too short. Those of the party who wished were conveyed back to Airways House, where we thanked our hosts, particularly Mr. Handover who accompanied the party, and congratulated them on the excellent of the organisation of the demonstration. Yes, Hannibal is "great," in every sense of the word.

N. E. K.

#### Civil Aviation in India

THE Bombay correspondent of *The Times* states that the Government of India recently wrote to the Bombay Chamber of Commerce that it had found it necessary to refer the whole question of air services to the Retrenchment Committee. The Chamber, in reply, state that the Government assumed certain responsibilities for the Indian section of the England-Australia air route. If that scheme is now abandoned without any satisfactory arrangement for an alternative service, the Government will, in the Chamber's opinion, be guilty both of neglecting its obligations under the International Air Convention, to which they are parties, and of grave dereliction of its Imperial responsibilities. The Chamber understand that Messrs. Tata are prepared to start a service between Karachi, Bombay, and Madras, involving a very small and decreasing subsidy for the next two or three years, and thereafter nothing. There is no reason, therefore, why this service should be held up from motives of economy, and the Chamber hope that no obstacles will be placed in the way of Messrs. Tata's starting the service at the earliest possible date.

#### Imperial Airways

STATISTICS issued by Imperial Airways show that the large triple-engined air liners used on the "Silver Wing" service between London and Paris have now covered 2,000,000 miles without any mishap resulting in injury to either passengers or crew. The air liners of the whole fleet have, during the last seven years, flown 7,285,587 miles, carrying 1,760,579 passengers. Imperial Airways also announce that, as from July 27, their head office and London terminus will be Airways Terminus, Victoria

Station (Continental Departures), London, S.W.1. (Telephone, Victoria 2211; Telegrams, Impairline, London.) The entrance to the new premises is exactly opposite the Royal Waiting Room and entrance to the Continental departure platform, and taxi-cabs with air passengers will approach Victoria Station in exactly the same way as if they were taking passengers for the boat trains. Passengers for the services of the German Air Company, Deutsche Luft Hansa, and for those of the Belgian Company, S.A.B.E.N.A., as well as those of Imperial Airways, will use this Air Terminus, and thus the great majority of travellers to the Continent, by whatever means they cross the Channel, will start from and arrive at the same point in London. The present office at Airways House, Charles Street, will be retained as a branch West End passenger and freight booking office and inquiry bureau, but car services between London and Croydon will run from the Airway Terminus at Victoria to Croydon, and *vice versa*, from July 27.

#### Peking-Berlin Air Mail in Trouble

ONE of the Junkers machines of the Eurasia Corp.—operating on the eastern section of the recently formed Peking-Berlin air mail service—is reported to have been captured by Mongolian tribesmen, and some anxiety is felt for the safety of the German pilots. The machine, en route for Manchuli from Peking, was forced down on July 2 in Outer Mongolia, and on July 4 a relief machine discovered the missing aircraft surrounded by troops. When the relief machine came down low the troops opened fire, causing slight damage to the former, which managed to get away with some difficulty. There was no sign of the other pilots.



THE JAVA-AUSTRALIA AIR MAIL: The 3-engined Fokker monoplane "Abel Tasman," piloted by Pattist, refuelling at Rambang on May 12 on the first Dutch Air Mail Service from Holland to Australia.



# AIRPORT NEWS

## CROYDON

THE week under review has been quite ordinary, and there is really very little of real interest to record. Everything seems to have happened according to plan, the services all running to time.

"Hadrian" has arrived. For the benefit of my readers who do not know Hadrian, I had better tell you he is "Hannibal's" twin. Many rumours were going around during the week that Hannibal's certificate had been taken away, as the A.I.D. had ordered some modification to be made. However, this was not the case; the fact was that Hannibal was taken off service for a few days to enable a thorough inspection to be made to see how it had been behaving. I understand everything was found to be in perfect order—there was not a nut or rivet loose anywhere. Hannibal is now back on service. About the middle of the week a flight to Paris and back was given to the Press in Hannibal, and they all seemed very much impressed, and remarked on the complete absence of noise in the cabin. Many passengers are now asking especially to fly in this machine, and book their seats for the service for which it is scheduled. Probably the massiveness of it gives them the utmost confidence. Imperial Airways should find no difficulty in filling these machines when they get them all on service. The first four are all to be the Eastern type, with only 18 seats instead of 38, and in every flight made so far they have had every seat booked, so there seems no reason why the European type, when delivered, should not be full on nearly all trips.

Redwing Aircraft Co. are now turning out their machines in numbers, and they have quite a stock of them at Croydon. It is a great pity this machine was not designed about two years earlier, as it would have been well to the fore.

Mr. P. Bertrand, a member of that famous French fencing family, has just acquired a Moth from the Cinque

Ports Club, and has been doing a great deal of flying with it this week.

On Thursday Dr. Luther, President of the German Reichsbank, arrived by a Luft Hansa special. The object of his visit is, of course, well known. He seems to have the art of dodging the Press, as he was in the country and out again before they knew he had been here, although he was expected. It takes a clever man to keep clear of reporters and photographers, but he succeeded to a very great extent.

Personal Flying Services' Junkers has been repaired after its boundary light incident, and is now away on a fortnight's tour of Europe. The Desoutter, in consequence, is having to work overtime, doing four and five return trips to Berck a day.

Mr. Charlie Allen, who was a pupil of the late Lt.-Col. Henderson, and afterwards one of his pilots, and who was chief pilot for British Air Transport, has just left that company and joined Surrey Flying Services.

The joy-riding firms are still getting plenty to do, and even during the week, normally a slack time, they are getting quite a good number of passengers.

I hope that next week there will be more news of interest to report.

The following news has just come to hand.

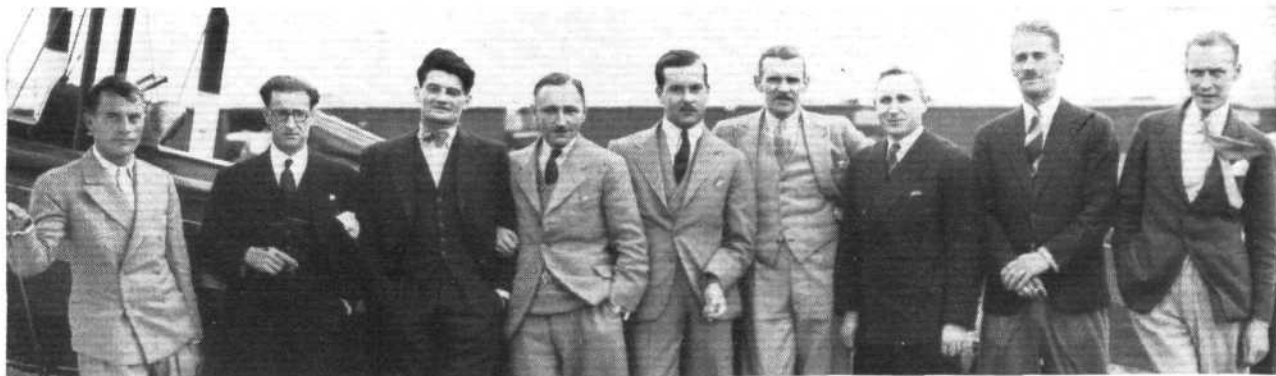
Misfortune has overtaken Mr. Rathje and Mr. Lutz, who used to fly on the Luft Hansa Berlin—Croydon night air mail service. Last year they were both transferred to Peking, the Chinese end of the Luft Hansa services. While flying last week Mr. Rathje was shot down by rebels, the machine being reported missing. Mr. Lutz set out to look for him. He saw the machine on the ground, but was also shot at. He escaped, but it is understood that Mr. Rathje is being held for ransom.

The traffic figures for the week were:—Passengers, 1,530; freight, 80 tons.  
P. B.

### Hull and Aviation

We have referred on a previous occasion to the efforts and ambitions of the City of Hull regarding the development of aviation on Humberside, and we set forth at the time the advantages offered. The Hull Development Committee, in conjunction with the Aerodrome Committee of the Corporation, have launched an energetic campaign to attract aircraft constructors and the allied industries, and

have issued a folder setting forth the facilities and advantages of establishing factories, etc., on Humberside. On the front of the folder is a bird's-eye view picture of the area around the Hedon aerodrome, showing the present aerodrome, its close proximity to the river and railway, the suggested site for the proposed seaplane base, the position of the King George and other Docks, and the large area of land available for aircraft construction factories.



**A RETURN VISIT:** As a return for the hospitality which was accorded the members of the Heston Cruise recently, while they were in France, Airwork Ltd. and the Anglo-Persian Oil Co., Ltd., are entertaining a representative gathering of French private owners who have flown over here. Above the party is seen during a visit to the D.H. works at Stag Lane and are standing in front of the Moth recently ordered by H.R.H. the Duke of Gloucester. (L. to R.) F. N. St. Barbe (business manager to D.H.), J. Charignon, E. Malterre, J. German, E. Bret, J. C. Taylor (B.P. Aviation Manager), G. Lebeau, O. H. W. Cooke (publicity manager to D.H.'s), C. S. Thom (assistant business manager to D.H.'s). (FLIGHT Photo.)



### Director of Airship Development

WING-COMDR. WILLIAM C. HICKS, A.F.C., has been appointed Director of Airship Development in succession to the late Wing-Comdr. Colmore. The Airship Directorate will be concentrated at the Air Ministry, instead of at Cardington as formerly.

Squadron-Leader S. Nixon, it should be mentioned,

remains at Cardington as superintendent of the Royal Airship Works.

### Elliott Memorial Prize

THE Elliott Memorial Prize has been awarded to Aircraft Apprentice S. G. Taylor, at Halton, who received the highest marks in the general studies paper in the recent final passing-out examination.

## A NEW FRENCH LIGHT 'PLANE COMPETITION

**I**N order to encourage the development and construction of tourist planes, the French Air Ministry has announced a new National Competition, which will be termed the Concours National Technique d'Avions de Tourisme.

This competition will be limited to two-seater planes equipped with a power plant of 120 h.p. This h.p. may be divided among several motors. The entries are limited to French houses presenting planes and motors constructed in France. Aviation material manufactured in France under licence is also authorised to compete. The crews of the planes must be French.

Cash prizes to the amount of 300,000 fcs. (£2,400) will be awarded as follow:—1st prize, 150,000 fcs. (£1,200); 2nd prize, 75,000 fcs. (£600); 3rd prize, 25,000 fcs. (£200); 4th, 5th, 6th, 7th and 8th prizes, 10,000 fcs. (£80) each.

The competition will be held under the rules of the F.A.I. during the period September 23—October 11, 1931. The competition will comprise—

1. A series of technical tests: (a) Flight tests (take-off, landing, climb, speed and ease of manoeuvring and piloting); (b) an examination of the qualities of the construction of the planes (construction, comfort and safety).

2. A tour of presentation of the planes. This tour will comprise about 3,500 km. (2,250 miles) around France. It will last about ten days and all of the planes entered are obliged to take part in it. The tour will be flown immediately after the technical tests have been held.

The crew of a plane must consist of two persons equipped with parachutes of an approved type and stamped by the Bureau Veritas. Each person aboard the plane will be reckoned as weighing 80 kg. (176 lb.), and if not of that weight, ballast will be used to make up the difference. Each

person will be allowed 15 kg. (23 lb. of baggage. The use of brakes is authorised.

The speed contest will be flown over a circuit of 486 km. (305 miles), the itinerary of which will consist of Orly—Artenay—Orly. This circuit will be traversed three times, thus making a distance of 1,458 km. (915 miles). No landings will be permitted during the flight.

Additional points will be awarded for planes of whole or in part of metal construction. Also for metallic propellers. The landing carriage must have a width of at least 17 per cent. of the wing span. Points will be awarded according to its strength and form of construction. Also for the efficiency of the brakes. The comfort, visibility and appearance of the plane will also be taken into account by the Jury.

The planes entered in the competition must have either folding or demountable wings. If of the folding-wing type, the operation must be able to be accomplished within ten minutes by the crew of the plane alone, and the width presented, when the wings are folded along the fuselage, should not exceed 4.50 m. (14 ft. 9 in.). If the plane is of the demountable-wing type, the unmounting must be accomplished by two men in at least 2 hr.

The power plant and its constituent parts should be readily accessible and points will be awarded accordingly. Fire-prevention devices will also be taken into consideration, such as quick-emptying fuel tanks, and their insulation from the other parts of the plane. Twenty points will be awarded to planes equipped with a heavy-oil motor of the Diesel type. The same number will also be awarded for the facility presented for the operation of parachutes, etc.

Entries for this Concours closed on July 15.

R. C. W.

## MERTHYR AVIATION SOCIETY BALLOT

### Merthyr's Aviation Society Ballot

**F**OLLOWING on our paragraph last week stating that we had no knowledge of the above Ballot, the results of which it was stated on the tickets would be published in FLIGHT, in order that our position in the matter may be quite clear to those who may have obtained or received one of the Ballot books, we publish below the whole correspondence referring to the matter:—

Merthyr Aviation Society,  
Headquarters:  
Market Square,  
Merthyr Tydfil,  
Glam.

DEAR SIR,—As regular readers of your FLIGHT, I have been asked if you would kindly supply the above with names and addresses of secretaries of private flying clubs in this country, as we are running a small competition and wish to get in touch with same, and would also like to know if we could publish the names of winners in your most valuable paper. Thanking you in anticipation,  
I am, yours truly,  
E. WARRILOW.

The Editor, FLIGHT.

June 11, 1931.

E. Warrilow, Esq.,  
Merthyr Aviation Society, etc.

DEAR SIR,—In response to your request I have pleasure in enclosing herewith list of British flying clubs.

I note your remarks concerning the proposed competition, and would like to say I am always pleased to report events of this nature when space allows, but I should be glad if you would make a note of the fact that all such matter must reach me by Monday morning at the latest for inclusion in the current week's issue.  
Yours faithfully,  
H. V. JONES, Asst. Editor.

July 1, 1931.

DEAR SIR,—Some time ago I wrote to you re our competition. We should very much like to get a list of names of prominent people such as:—Bert Hinckler, Amy Johnson, etc., also addresses of same. I should also like to add that I am a press photographer and could send you on quite a lot of useful stuff around Cardiff way, which I would be pleased to do gratis. Thanking you for past kindness.  
I am, yours, etc.,  
E. WARRILOW.

July 7, 1931.

E. Warrilow, Esq., etc.

DEAR SIR,—Referring to your letter of July 1, and your request for names of prominent people, we hardly understand as to what is happening in connection with the "Ballot" which you drew our attention in your previous letter. We would say that we were intensely surprised to see the nature of the announcement in the specimen ballot book which you sent us, as we have no knowledge whatever of the affair, and with the information which you sent us we cannot recognise Editorially in any way the suggestion that results will be published in FLIGHT. In fact, the enclosed paragraph,\* which was crowded out last week, will appear in this week's issue, and so far as we are concerned we must request that you take immediate steps to set this matter right and to withdraw all suggestion that FLIGHT is in any way associated with the venture.

Yours faithfully,  
STANLEY SPOONER, Editor.

\* See FLIGHT, page 670.

Merthyr Aviation Society, July 8, 1931.

DEAR SIR,—In reply to yours of yesterday's date, I was much surprised and taken back. We would not have printed on our tickets that the result would be published in FLIGHT unless we received any letter from you, as your letter of June 11, signed by Mr. H. V. Jones, stating that he would be pleased to report any events of this nature. I should like you to understand that we are not out for any money making scheme, but are a band of 30 young men who are trying to foster aviation in the borough. We have already got our councillors interested with the view to building a municipal aerodrome in our town. About four months ago we purchased an Avro Avis 35 h.p. Bristol "Cherub," and after advice found it not airworthy. The Brooklands Aviation Co. have offered to take in part exchange, or sell for us, hence the reason of the Ballot. As I daresay you are aware of the depressing times in South Wales coalfields, and we mostly consist of working men, I am sure you will understand, as this way was the only possible way to obtain a machine that would be safe to fly. If this paragraph, which you send, will be published in FLIGHT, it is going to put paid to months of hard work, which I am sure through a pure misunderstanding. And as an old reader of FLIGHT myself, and the chairman who has some first copies and knowing what good you have done to foster aviation in this country, I feel sure that after this letter we will have your support. We are prepared to give you any information on this matter should you so require, and trusting to hear from you,  
I remain,  
Yours faithfully,  
E. WARRILOW, Hon. Sec.

The Editor, FLIGHT.

July 9, 1931.

E. Warrilow, Esq., Hon. Sec., etc.

DEAR SIR,—We are in receipt of your letter regarding the Ballot which you have been arranging. We, however, are unable to alter our view in regard to this, however much sympathy we may have with your stated efforts in the cause of aviation.

In order to make quite clear our position in this matter, having regard to the distribution of the books of tickets which appear to have already been despatched, we feel it necessary for us to publish in our next issue the entire correspondence.

We would point out that in your original letter to us there did not emerge in any shape or form the suggestion of the "competition" being a ballot. It was naturally inferred that the nature of the suggested competition was an ordinary club meeting for aeroplanes, to which we, of course, at all times are only too willing to make reference in the interests of aviation.

Yours faithfully,  
STANLEY SPOONER, Editor.

On Monday last, the following letter reached us:—

### MERTHYR TYDFIL AND DISTRICT GLIDING CLUB (Incorporating North Glamorgan and South Brecknocks.)

President: Griffith Llewellyn, Esq. Vice-President: J. T. Willows, Esq.  
Ingleside, The Walk, Merthyr Tydfil.

July 11, 1931.

Re "Merthyr Aviation Society"

DEAR SIR,—With regard to your note under above heading in this week's FLIGHT, I would like to take this opportunity of stating, on behalf of the only bona fide club in this district, that we have no knowledge of any person or persons calling themselves "The Merthyr Aviation Society." Nor have we any knowledge or connection with any ballot, lottery, or sweepstake run by such society. We would suggest that anyone receiving books of tickets should refer the matter to the proper authority.

Yours faithfully,  
C. L. WILLS.



# AIRISMS FROM THE FOUR WINDS

## Paris—Tokio Flight Fails

THE French pilots Doret and Le Brix left Le Bourget early on July 12 in an attempt to make a non-stop flight to Tokio. They were flying a Dewoitine 33 monoplane (650-h.p. Hispano) *Trait d'Union*, and passed over Moscow in the evening, and the next heard of them was to the effect that they had to abandon the machine by parachutes over Nijine Oudinsk, Siberia. Both pilots were uninjured. On learning of the loss of the machine, M. Francois Coty, who has financed the attempt, announced that another machine is ready, and that a second attempt will be made without delay.

## U.S.—Japan Non-Stop Attempt

Two Texas airmen, Mr. R. L. Robbins and Mr. H. S. Jones, set off from Seattle at 3.57 a.m. on July 8 in an attempt to make a non-stop flight to Tokyo for a prize of £5,000, offered by the *Asahi* newspaper. After a flight of 17½ hours, they arrived over Fairbanks, Alaska, where it was arranged they would refuel in the air. On July 9 they passed over Nome, but had to land at Solomon, 40 miles farther on, having been unable to refuel as arranged. They had then flown 2,100 miles.

## Another Atlantic Attempt

THE Hungarian airmen, M. Alexander Magyar and M. George Enders, took-off from Roosevelt Field, New York, on July 13, in their Lockheed "Sirius" monoplane *Justice for Hungary* for Harbour Grace, on a non-stop flight from Newfoundland to Budapest. They arrived at Harbour Grace late the same night.

## Graf Zeppelin

COL. THE MASTER OF SEMPILL received the following telegram from Dr. Eckener cancelling the flight of the *Graf Zeppelin* to London. "In view of the extraordinarily serious situation in Germany at this present moment, I find myself compelled with very keen regret and disappointment to cancel the flight of the *Graf Zeppelin* to the London Air Park on Thursday next, July 16. I hope to be able to make this flight at a later and more opportune moment."

## Airman Eaten by Cannibals?

It is feared that an Australian pilot, L. J. Trist, who last month was missing when operating a Junkers monoplane on the New Guinea goldfields service, has fallen a victim of cannibals. A report from New Guinea states now that two natives have declared that Mr. Trist's aeroplane crashed in the bush, and that Mr. Trist, who was sick, walked to the nearest village. He endeavoured to make friends with the natives, but they struck him down and ate him after a festival. The aeroplane was then looted and buried in grass.

## French Flight Round Africa

M. P. D. CHANTERAINE, president of the committee of L'Entente Francaise, accompanied by a pilot and mechanic, left Cairo on July 10 in his aeroplane on the last stage to Paris of his flight round Africa. The mission was under the patronage of the French Government, and its object was to visit the French Colonies in Africa, and show appreciation of their help in the French Colonial Exhibition. M. Chanteraine stated that he considered the flight to have shown admirably what could be done by small aeroplanes. In this case the machine was a Farman, with a 240-h.p. engine.

## A Fine African Flight

MR. CAMPBELL BLACK, of Wilson Airways, has just accomplished a fine 1,600-mile flight in a D.H. "Puss Moth." He took off from Nairobi at 2.15 a.m. on July 9, and flew in the dark to Entebbe, where he arrived at 6.30 a.m. He then flew on to Kisumu, whence he flew non-stop to Mombassa, arriving there at 1.40 p.m. From here he flew on to Zanzibar and then to Dar-es-Salaam, and from here he started on the return flight to Nairobi at 4.35 p.m. Again flying in the dark, he steered by compass over the dangerous Kilimanjaro country, and was blown slightly off his course, being forced to land, by aid of grass fires, at Thika, 30 miles north-east of Nairobi.

## An Alpine Crash

A GUIDE and a party of tourists found a wrecked and abandoned aeroplane on the glacier, 10,200 ft. up, between Aiguille du Geart and the Aiguilles Marbrées. It was reported that the machine belonged to Count Bonzi, and a message from Courmayeur stated that the airmen were there, unhurt.

## French Air Mission's European Tour

A FRENCH aeronautical mission, headed by General de la Goys de Mazeyrac, and consisting of six military machines piloted by the well-known French pilots Costes, Arrachart, Pelletier d'Oisy, Givier, Challe and Delaitre, left Paris on July 9 on a tour of Europe. They reached Brussels, the first stage of the flight, about an hour and a-half later.

## Amateur or Professional?

HERE is a really good story, which is also topical by virtue of the existing controversy in connection with the status of Service pilots in the King's Cup race. A mere professional (according to the Royal Aero Club rules), since after flying the whole of the war he has now become a director of a light aircraft company, was recently flying over a Service aerodrome near London. It was a gusty day, and he was amused to see two Siskins and a Fairey



**FOR INTERMEDIATE TRAINING:** The "Active," designed and built by Arrow Aircraft (Leeds) Ltd., is a single seater of all-metal construction, intended for training single-seater fighter pilots at low cost. The engine is a Cirrus-Hermes IIB inverted. The "Active" is very "clean," and is reported to have an excellent performance.

IIIF standing on their noses on the aerodrome, so he made a tarmac landing himself, and, when asked what he wanted, said: "Oh, I just dropped in." Then, looking round, said: "What is all this? You look as if you have had some trouble." "All aircraft are very difficult to fly and handle in bumpy weather," answered the amateur (Service) pilot, "very difficult indeed. Is there anything I can do for you?" "Oh, no," said the professional, opening up the throttle, "I only thought I would drop in, because it looked to me as if you were playing darts and might like someone else to join the game."

#### A Subsidy for Irish Aviation?

It is learned in Dublin that conversations have taken place between the Council of the Irish Aero Club, the Minister for Industry and Commerce, and the Minister for Finance as to the possibilities of the granting of a subsidy to the Club for the furtherance of its activities. No statement has been made as to the outcome of these conferences, but it is believed that the Government will at least make a small grant before the end of the present year. Since the opening of the civil aerodrome at Finglas, County Dublin, there appears to be a definite trend of "airmindedness" coming over the Irish people, writes our representative, and each week-end a large crowd is to be seen at the aerodrome either waiting for joy-rides or admiring the courage of those who are doing so. A difficulty with air taxi work such as Iona National Airways intend to carry out in Ireland is the lack of suitable landing grounds; in the West of Ireland fields are particularly small and usually stone-walled, and there are very few estates suitable for aerodromes. Some Irish pilots have, however, in the course of their cross-country flights, made special note of any fields that appear suitable, and the whereabouts of these can usually be ascertained when the aerial visitor calls at Baldonnel for Customs clearance. Rumours are heard in Irish flying circles as to the existence of a Desoutter monoplane in one of the somewhat leaky hangars at Collinstown aerodrome, and we are led to believe that we shall shortly be hearing of another aircraft-operating company in Ireland in the very near future.

#### The F.A.I. Gold Medal

In our issue for June 26 last we reported that the 1930 Gold Medal of the Fédération Aéronautique Internationale had been awarded, at the Annual Congress held in Roumania, to Air Commodore Kingsford Smith. We now learn that this information—which we obtained through the usual accredited Press information channels—is incorrect. Actually, the voting of the Congress placed Gen. Italo Balbo first, Rear-Admiral Byrd, U.S.N., second, and Air Commodore Kingsford Smith third. The Gold Medal, therefore, was awarded to Gen. Balbo in recognition of his leadership in the Transatlantic flight of 12 Savoia flying boats from Italy to South America.

#### Anglo-American Flying Service and N.F.S.

We are asked to publish the following statement by National Flying Services, Ltd.:—Advertisements have recently appeared in the provincial papers associating

National Flying Services (and/or the Hanworth Club) with a scheme for training pupils to be professional air pilots. These advertisements, which are published in the name of Anglo-American Air Service, or Mr. J. Oxley, of Gerrards Cross, quote a fixed sum for the training, ask for deposit payments, and hold out hopes of employment at the end of the training. N.F.S. are in no way associated with or responsible for such offers. Whilst they carry out, and prepare to carry out, any suitable cases, training for "B" class (professional) air pilot's licence, it is strictly against their practice to undertake to train persons of unknown suitability for a fixed sum, to ask for advanced payments, or to guarantee professional employment.

#### Ferrier Safety Petrol

On Tuesday, July 14, Mr. Bardel, Technical Superintendent of the Air Union, gave a demonstration at Croydon of a brand of petrol which is intended to obviate, or at least reduce, the risk of fire in the air or after a crash. We hope to give a full account of this demonstration in our next issue. For the moment it suffices to say that Mr. Bardel soaked a rag in ordinary petrol, lit it, and quenched the flames in a bucket of the Ferrier petrol. Other similar demonstrations were made. A Renault car with standard Renault carburettor was then started up and driven on Ferrier petrol, and a Goliath with two 260-h.p. Salmson engines was flown on the same fuel. In the latter case special carburettors were used.

#### Ninety Years of Unceasing Mirth

HAVING but recently celebrated—with a certain amount of pride—our own Twenty-First Birthday issue of FLIGHT, we feel terribly youthful when we turn the pages of this week's *Punch*. For this particular issue—published on Wednesday last, at one shilling—is its 90 Years' Birthday Number! It is a "bumper" production of some 60 pages containing new and old features. The main cartoon, by Sir Bernard Partridge, entitled "Memories," depicts Mr. Punch showing his gratitude to some of those celebrated contributors of the past—W. M. Thackeray, John Leech, Mark Lemon, "Dicky" Doyle, Douglas Jerrold, Sir John Tenniel, Charles Keene, F. C. Burnand, etc. Then there is a special commemorative section by "E. V. L." covering the period of the reign of His Majesty the King, from the Coronation to the Great War. Of course, aircraft figure in this issue—E. H. Shipard, in his "Looking Forward," favours the Autogiro type of machine, while an interesting round-the-world flight is also depicted. Be advised, therefore, to get your copy without delay if you want cheering up!

#### New York—Bahamas Air Mail

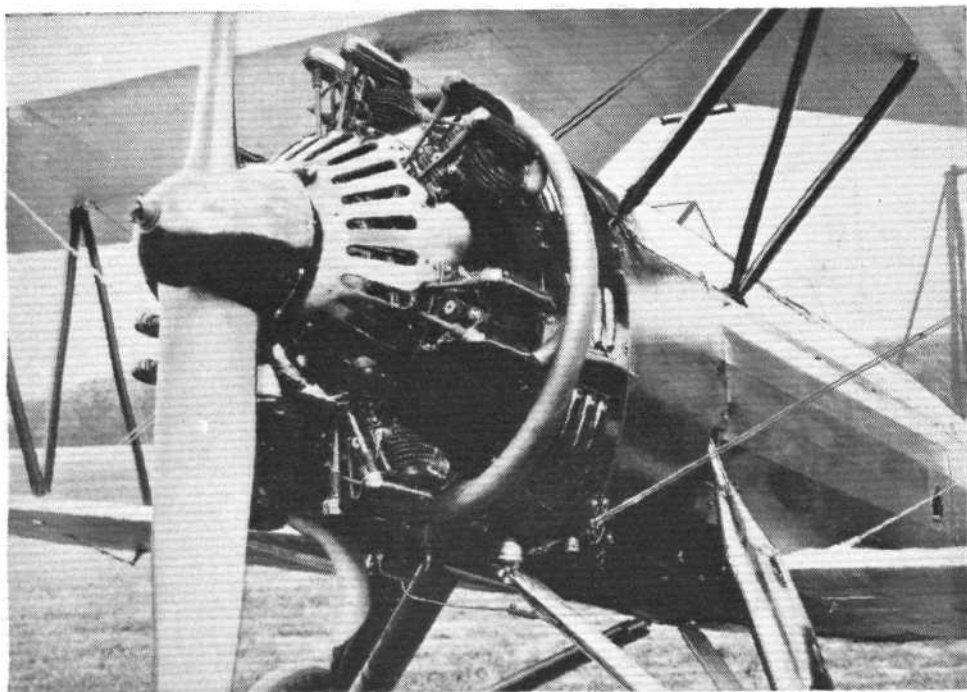
THE Postmaster-General announces that the air mail service between New York and the Bahamas has been suspended. There is now no air mail service available for correspondence for the Bahamas posted in this country.

#### London Aeroplane Club

The Club will be closed down for the staff holidays from Friday evening, July 31, until Monday, August 17, 1931.

#### FOR USE IN COLD CLIMATES

A new type of cowling has been produced by the Avro company for their Trainer (621) and Advanced Trainer (626) machines. The openings in the cowling can be adjusted from the cockpit by a Bowden cable and plunger arrangement.





# THE ROYAL AIR FORCE

London Gazette, July 7, 1931.

## General Duties Branch

The follg. are granted short service commns. as Pilot Officers on probation with effect from and with seny. of June 26 :—R. G. M. Apthorp, W. J. F. Bull, E. M. Donaldson, C. F. P. Franklin, H. D. Gilman, L. T. Jearey, D. P. Lee, N. W. Mackenzie, R. N. McKern, G. A. L. Manton, A. C. Martin, O. A. Morris, R. Mottershead, R. R. Murphy, B. S. Nicholl, T. P. Pilcher, P. S. H. Ross, W. J. Smail, J. O. Willis, R. H. Younghusband. The follg. Pilot Officers, are promoted to the rank of Flying Officer (June 14) :—J. Heber Percy, R. V. McIntyre.

Flight Lt. N. T. Goodwin relinquishes his short service commn. on completion of service (July 8); the short service commn. of Pilot Officer on probation L. T. McGinn is terminated on cessation of duty (July 8); Lt. A. C. G. Ermen, R.N., Flying Officer, R.A.F., ceased to be attached to R.A.F. on return to Naval duty (July 7); Lt. H. P. Sears, R.N., Flying Officer, R.A.F., relinquishes his temp. commn. on resignation from the Royal Navy (July 6).

## Accountant Branch

Pilot Officer on probation R. Peel is confirmed in rank and promoted to rank of Flying Officer (June 2).

## Medical Branch

The short service commn. of Flying Officer R. N. Kinnison, M.B., Ch.B., is antedated to Oct. 28, 1930.

## Princess Mary's Royal Air Force Nursing Service

The follg. Staff Nurses are promoted to rank of Sister :—Miss D. M. Roberts (June 1); Miss H. D. Terry (June 16).

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified :—

## General Duties Branch

Air Marshal Sir W. G. H. Salmond, K.C.B., K.C.M.G., D.S.O., to R.A.F. Depot, Uxbridge, on transfer to Home Estab., 27.5.31.

Air Commodore R. C. M. Pink, C.B.E., to H.Q. Air Defence of Great Britain, Uxbridge, pending appointment as Senior Air Staff Officer, 1.7.31.

Wing Commander J. H. Herring, D.S.O., M.C., to Air Ministry (D.P.S.), for duty as Assistant to the Director of Personal Services, 1.7.31.

Squadron Leader H. G. R. Malet, to Aircraft Depot, Hinaidi, Iraq, 5.6.31, C. L. Scott, D.S.C., to Marine Aircraft Experimental Estab., Felixstowe, 4.7.31.

Flight-Lieutenants: A. H. Wheeler, to Aircraft Depot, Hinaidi, Iraq, 5.6.31. H. E. King, to No. 100 Sqn., Donibristle, 29.6.31. H. W. Raeburn, to No. 99 Sqn., Upper Heyford, 29.6.31. F. E. Bond, to Royal Air Force College, Cranwell, 7.7.31. A. G. Pickering, A.F.C., to Marine Aircraft Experimental Estab., Felixstowe, 14.5.31. E. M. Drummond, to H.Q. Wessex Bombing Area, Andover, 7.7.31. R. H. S. Spaight, to No. 26 Sqn., Catterick, 6.7.31.

Flying Officers: T. W. G. Eady, to R.A.F. Depot, Uxbridge, 11.6.31. R. Louis, to Home Aircraft Depot, Henlow, 16.7.31. M. G. Philpott, to Armament and Gunnery School, Eastchurch, 1.7.31. P. J. Connolly, to No. 6 Sqn., Ismailia, Egypt, 9.6.31. C. McK. Grierson, to R.A.F. Depot, Uxbridge, 30.5.31.

Pilot Officers: F. G. Mason, to No. 216 Sqn., Heliopolis, Egypt, 10.6.31. T. A. Jefferson, to No. 84 Sqn., Shaibah, Iraq, 12.6.31. R. Hanson, C. L. Monckton, H. N. G. Ramsbottom-Isherwood, all to Aircraft Depot, Karachi, India, 20.5.31. D. W. Morrish, to R.A.F. Depot, Uxbridge, 3.6.31. The undermentioned are all posted to R.A.F. Depot, Uxbridge, on appointment to short service commns., with effect from 26.6.31 :—R. G. M. Apthorp, W. J. F. Bull, E. M. Donaldson, C. D. P. Franklin, H. D. Gilman, L. T. Jearey, D. P. Lee, N. W. Mackenzie, R. N. McKern, G. A. L. Manton, A. C.

## Cadre and Auxiliary Air Force Squadrons

Cadre and Auxiliary Air Force squadrons will carry out annual training during 1931, as follows :—

## Cadre Squadrons

Unit.	Period.	Place.
501 (City of Bristol) Squadron ..	July 26 to August 8	Manston.
502 (Ulster) Squadron ..	July 13 to 26	Manston.
503 (County of Lincoln) Squadron ..	July 19 to August 1	Manston.
504 (County of Nottingham) Squadron ..	August 2 to 15	Hawkinge.
<b>Auxiliary Air Force Squadrons</b>		
600 (City of London) Squadron ..	August 2 to 16	Tangmere.
601 (County of London) Squadron ..	August 2 to 16	Lympne.
602 (City of Glasgow) Squadron ..	July 17 to 31	Hawkinge.
603 (City of Edinburgh) Squadron ..	July 11 to 25	Turnhouse.
604 (County of Middlesex) Squadron ..	July 19 to August 2	Tangmere.
605 (County of Warwick) Squadron ..	August 2 to 16	Manston.
608 (North Riding) Squadron ..	August 9 to 23	Thornaby.

## Royal Air Force—Aircraft Apprentices. 400 Vacancies for Educated Boys

The Air Ministry announces :—Four hundred aircraft apprentices, between the ages of 15 and 17, are required by the Royal Air Force for entry into the Schools of Technical Training at Halton, Bucks, and at Cranwell, near Sleaford, Lincs. They will be enlisted as the result of an Open Competition\* and of a Limited Competition,† and these Competitions will be held in the near future by the Civil Service Commissioners and the Air Ministry respectively. Boys in possession of an approved first school certificate may be admitted without other educational examinations. Successful candidates will be required to complete a period of 12 years' regular Air Force service from the age of 18, in addition to the training period. At the age of 30 they may return to civil life, or upon attaining N.C.O. rank, and subject to Service requirements, may be permitted to re-engage to complete time for pension.

Full information regarding the dates of the respective examinations, the methods of entry and the aircraft apprentice scheme generally can be obtained upon application to the Secretary, Air Ministry (Aircraft Apprentices' Depart-

## RESERVE OF AIR FORCE OFFICERS

## General Duties Branch

G. S. Waller is granted a commn. in Class AA (ii) as Pilot Officer on probation (June 22). The follg. Pilot Officers on probation are confirmed in rank :—C. J. Sanders (June 3), J. S. Sheppard (June 5), E. H. Buxton (June 7). Pilot Officer T. Herbert is promoted to rank of Flying Officer (July 17, 1930).

The follg. are transferred from Class C to Class A :—Flight Lt. W. N. Cumming, D.F.C. (June 20); Flying Officer J. L. Mayer, D.F.C. (May 22); Flying Officer J. S. Newall (April 30). Flying Officer J. H. Colbert is transferred from Class A to Class C (April 20) :—Flying Officer T. H. W. Beadle is transferred from Class AA (ii) to Class C (Jan. 11); Flight-Lieut. W. H. Oakley, M.B.E., relinquishes his commn. on completion of service (Sept. 12, 1930); Flying Officer R. E. Watson relinquishes his commn. on completion of service (June 14).

## Medical Branch

J. M. Fosbrooke, M.B., Ch.B., is granted a commn. in Class DD as Flying Officer, on resigning his commn. in Auxiliary Air Force (Oct. 15, 1930).

## AUXILIARY AIR FORCE

## General Duties Branch

No. 603 (CITY OF EDINBURGH) (BOMBER) SQUADRON.  
Flight Lt. J. M. Fosbrooke, M.B., Ch.B., resigns his commn. and is appointed to a commn. in Reserve of Air Force Officers, Class DD (Oct. 15, 1930).

## Stores Branch

Flight Lieutenants: T. S. James, to No. 2 Flying School, Digby, 7.7.31. H. E. Tansley, M.C., to No. 1 Stores Depot, Kidbrooke, 7.7.31. E. L. Ridley, to Station H.Q., Netheravon, 1.6.31. R. H. Latham, to No. 3 Flying Training School, Grantham, 9.6.31. H. Sleigh, to R.A.F. Depot, Uxbridge, 5.6.31.

Flying Officer M. E. O'B. Atkinson, to R.A.F. Depot, Uxbridge, 5.6.31.

## Accountant Branch

Squadron Leader W. G. W. Prall, to No. 5 Flying Training School, Sealand, 7.7.31.

Flight Lieutenants: H. A. Murton, to Station H.Q., Kenley, 15.6.31. M. H. Luker, to Station H.Q., Upper Heyford, 20.6.31. R. T. Carter, to School of Army Co-operation, Old Sarum, 6.7.31. J. Charles, to Station H.Q., Upavon, 6.7.31. J. M. Adams, to No. 1 School of Tech. Training (Apprentices), Halton, 16.6.31.

Flying Officer H. Crowther, to Station H.Q., Manston, 23.6.31.

## Medical Branch

Flight-Lieutenants: T. J. D. Atteridge, to No. 14 Sqn., Amman, Palestine, 4.6.31. B. B. Kennedy, to Palestine General Hospital, Sarafand, 8.6.31.

## Chaplains Branch

Rev. J. I. Stuttaford, to Station H.Q., Boscombe Down, 1.7.31. Rev. R. D. Grange-Bennett, to No. 1 School of Technical Training (Apprentices), Halton, on appointment to a short-service commn., 2.7.31.

## NAVAL APPOINTMENTS.

The following appointment has been made by the Admiralty :—LIEUT. (Flying Officer, R.A.F.).—P. SOMERVILLE, to Keith (July 14).

ment), Gwydyr House, Whitehall, London, S.W.1. The sons of officers, warrant officers and senior N.C.O.s of the three services will receive special consideration.

The scheme offers a good opportunity to well-educated boys of obtaining a three-years' apprentice course of a high standard and of following an interesting technical career. Already over 6,000 aircraft apprentices have completed their training at the technical schools of the Royal Air Force, and the annual output is approximately 1,000 fully trained aircraftmen.

The principal trades open to boys are metal fitter, a new trade brought into existence by the introduction of the metal aeroplane, which involves training in both fitting and sheet metal work; fitter (aero engine); fitter (armourer); wireless operator-mechanic; and electrician. The apprentices are given a thorough training in their trade by highly qualified technical instructors and their general education is also carried on simultaneously by a staff of graduate teachers.

During the training period the rate of pay is 1s. a day for the first two years and 1s. 6d. a day thereafter until the apprentice has both attained the age of 18 and been posted to a unit on completing his training. When he is posted to a unit for duty as an aircraftman, the commencing rate of pay varies from 3s. 3d. to 5s. 6d. a day (22s. 9d. to 38s. 6d. a week) according to the marks obtained in the passing out examination. He also receives free board and lodging and uniform allowance. Subsequently, there is the prospect of promotion, on passing certain prescribed tests.

A few apprentices of special promise proceed to the Royal Air Force College (all their fees thereat being remitted) for training with a view to becoming Commissioned Officers.

For the remainder, opportunities arise later to volunteer to qualify in flying and become airman pilots. Between 100 and 120 of the latter are selected annually from volunteers of all trades. From amongst airman pilots a few are periodically selected for commissioned rank.

Press Section,

Air Ministry,  
June, 1931.

1. The Open Competition is conducted by the Civil Service Commissioners at the following centres :—

London      Belfast.      Edinburgh.      Plymouth.  
Birmingham.      Chatham.      Cardiff.      Portsmouth.

2. The Limited Competition is conducted at numerous centres selected by the various Local Education Authorities to bring the examination as near as possible to the neighbourhood in which their candidates reside.

## THE INDUSTRY

### Some Hermes Testimonials

THE Cirrus-Hermes Engineering Co., Ltd., have received two letters, one from Capt. C. D. Barnard, and one from Mr. E. K. Rayson, concerning the performance of "Hermes" engines. Capt. Barnard says:—"My aerial tour of the country has now completed three months' regular flying, and we have travelled practically all over Great Britain holding a pageant in a different town every day. I have with me six machines of different types, three of which are fitted with Hermes Mark II engines. The first machine fitted with this type, a three-seater Spartan, G-EBJS, has now completed 300 hr. without any trouble. I thought you would be interested to know this, as I consider it most wonderful service considering the extremely hard wear and tear the work entails on an engine. The three engines are standing up to the work wonderfully well and have given absolutely no trouble whatsoever."

Mr. Rayson writes:—"I thought that it might interest you to know that my Hermes-Avian (Mod. II) is behaving in the same exemplary manner as it did as a Hermes I on my trip from Buenos Aires to Pernambuco. I have now flown it some considerable number of hours and have had no trouble whatsoever. The service given by your firm compares favourably with that of the best car manufacturers, and that, combined with a very excellent product, convinces me that I have got the most satisfactory and reliable aero engine yet made. I am taking the machine to Egypt in September, where I have my business, and have no doubt that it will continue to clock up to the good marks it has won in the past."

### Petro-Flex Tubing

WE have received from Hobdell, Way & Co., Ltd., of 20, St. Clare Street, London, E.1, a booklet concerning their "Petro-Flex" tubing. This, as no doubt most of our readers are aware, is a light-weight tubing for the conveyance of petrol and oil, specially designed as a substitute for steel and copper tubing, for use in aircraft and other conditions where vibration is set up. In addition to possessing the advantage of a full measure of flexibility, "Petro-Flex" is impervious to the action of petrol, benzole and all the hydrocarbon oils, is strong and durable, and provides unimpaired flow. The booklet referred to above, besides describing the construction of "Petro-Flex," tells all about its uses, fitting, sizes, etc.

### The Physical Properties of Nickel-Iron

THE Research and Development Department of the Mond Nickel Co., Ltd., of Millbank, London, S.W.1, have issued a brochure on the Physical Properties of Nickel-Iron and Some Related Alloys. Of special interest to aero engine manufacturers is a section devoted to the "Invar" strut piston. This application of "Invar" aims to overcome the troublesome excessive expansion of light aluminium alloy pistons. Copies of this brochure will be supplied, free of charge, on application to the above department of the Mond Nickel Co.

### Caunter 2-Stroke on View

THE Caunter two-stroke radial air-cooled engine, which was described and illustrated in our issue of October 24, 1930, is one of the exhibits at Selfridges this week, and readers who are interested in this new development should make a point of inspecting the engine there. Many other aviation items of interest are on view, and altogether a visit this week is well worth while.

### Mr. Dowty makes a Move

DOUBTLESS many of our readers will remember the articles on various problems connected with aircraft undercarriages which Mr. G. H. Dowty has written for *The Aircraft Engineer* (Monthly Technical Supplement to *FLIGHT*). Mr. Dowty has now left the Gloster Aircraft Co., Ltd., and has established a firm of his own, under the title Aircraft Components Company, with offices at 4, Lloyd's Avenue, London, E.C.3, Telephone Royal 4595. Mr. Dowty will manufacture and market several of his patented undercarriage specialities, and anyone interested is asked to communicate with him at above address.

### Your Holiday Clothes

THE holiday season being at hand, many of us are no doubt looking over our wardrobe. Attention could, therefore, be drawn to Gieves' super flannels, as supplied to the Royal Navy; all requirements for yachting, such as Gieves' 5-oz. yachting caps, badges, Burgee brooches and other yachting jewellery, apart from a carefully-selected range of summer suitings and other items for holiday wear, obtainable from Gieves, Ltd., 21, Old Bond Street, W.1.

## IMPORTS AND EXPORTS

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910).

For 1910 and 1911 figures see *FLIGHT* for January 25, 1912.  
For 1912 and 1913, see *FLIGHT* for January 17, 1914.

For 1914, see *FLIGHT* for January 15, 1915, and so on yearly, the figures for 1930 being given in *FLIGHT*, January 16, 1931.

	Imports.		Exports.		Re-exports.	
	1930.	1931.	1930.	1931.	1930.	1931.
Jan. ...	2,987	7,965	147,935	142,596	—	1,074
Feb. ...	2,460	3,303	226,049	110,587	1,000	1,293
Mar. ...	744	5,615	156,098	83,088	802	3,441
April ...	2,959	2,216	213,390	213,401	79	530
May ...	11,706	1,964	158,460	275,382	2,550	198
June ...	15,029	6,780	252,443	78,298	1,060	361
	35,885	27,843	1,154,375	903,352	5,491	6,897

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## PUBLICATIONS RECEIVED

*Technical Notes of the U.S. National Advisory Committee for Aeronautics*: No. 366, *Torsion in Box Wings*. By J. B. Wheatley. February, 1931. No. 368, *The Variation in Pressure in the Cabin of an Airplane in Flight*. By M. N. Gough. March, 1931. National Advisory Committee for Aeronautics, Washington, D.C., U.S.A.

*A Short Course in Elementary Meteorology*. By W. H. Pick, B.Sc., F.C.P. Air Ministry: Meteorological Office. M.O. 247. H.M. Stationery Office, Kingsway, London, W.C.2. Price 2s. 6d. net. *Journal of the Royal Aeronautical Society*. May, 1931. No. 245. The Royal Aeronautical Society, 7, Albemarle Street, London, W.1. Price 3s. 6d. *The Story of the Airship*. By Hugh Allen. The Goodyear Tyre and Rubber Co. (Great Britain), Ltd., Wolverhampton. *The Gauge*. May, 1931. J. J. Habershon and Sons, Ltd., Holmes Mills, Rotherham.

*Department of Overseas Trade: Economic Conditions in Belgium in 1930*. Report by N. S. Reyntiens, O.B.E. H.M. Stationery Office, Kingsway, London, W.C.2. Price 4s. net.

*Hints for Commercial Visitors to El Salvador*. Ref. No. C3551. Department of Overseas Trade, 35, Old Queen Street, London, S.W.1.

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## AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors. The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

### Applied for in 1930

Published July 16, 1931

- 1,583. FAIREY AVIATION Co., Ltd., and F. H. ORDIDGE. Gun-mountings for use on aircraft. (350,890.)  
9,150. FAIREY AVIATION Co., Ltd., and M. J. O. LOBELLE. Control surfaces. (351,061.)  
9,512. A. H. R. FEDDEN, L. F. G. BUTLER, and BRISTOL AEROPLANE Co. Ltd. Radial-cyl. i.c. engines. (351,087.)  
10,284. WISEMAN, LTD., and W. P. SILLINCE. Fuel-pump mechanism for Diesel or compression-ignition engines. (351,112.)  
10,442. Sir F. H. ROYCE. Regulating means for i.c. engines for aircraft. (351,117.)  
12,080. IRVING AIR CHUTE Co., Inc. Parachute packs. (351,147.)  
13,948. S. LINDEQUIST. Apparatus for tanking aircraft in the air. (351,172.)  
26,931. J. G. NAVARRO and M. A. NAVARRO. Construction of aeroplane cabins. (351,332.)

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